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B L I S T E R   R U S T   W O R K  
I N   T H E   F A R   W E S T

March 21, 1922 to January 31, 1923.



Seattle Branch  
Office of Blister Rust Control,  
429 Lyon Building,  
Seattle, Washington.



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## SUMMARY OF SCOUTING

Scouting for the disease during the season showed the following:

(1) The disease was not found in western United States except in Washington west of the Cascade Mountains.

(2) In western Washington the presence of the disease on cultivated black currants is practically continuous from the Canadian line in San Juan and Whatcom Counties to the Columbia River in Pacific County. At numerous points the wild "stink" currant (*Ribes bracteosum*) was infected and in some cases the infected plants were not growing near infected cultivated black currants. In six cases red currants growing near infected cultivated black currants were infected. The first eradication of cultivated black currants has been practically completed throughout western Washington except in portions of King and Pierce Counties.

(3) Scouting east from Pacific County, Washington, failed to show the presence of the disease eastward along the Columbia River.

(4) Intensive scouting in adjacent Oregon failed to show the presence of the disease. This indicates that the Columbia River has at least temporarily checked the natural spread of the disease southward.

(5) Scouting in British Columbia east of the Cascades showed that the disease was present on both pines and *Ribes* in the general vicinities of Revelstoke and Beaton. These points are more than 100 miles north of our boundary line and are located in the northern fringe of the commercial pine stands in eastern British Columbia and the Inland Empire. Intensive scouting at points between these infected regions and the international boundary failed to show any trace of the disease. So far as the Inland Empire pines are concerned we may either assume that the disease will spread into the region in spite of anything that can be done or we may assume a possibility of keeping it out for at least several years by encouraging the general eradication of cultivated black currants and the most susceptible wild *Ribes* in eastern British Columbia, northeastern Washington, northern Idaho, and northwestern Montana.



## SUMMARY OF QUARANTINE

1. Last spring the Office of Blister Rust Control enforced both the Mississippi Valley Quarantine, No. 26, and the Cascade Ridge Quarantine, No. 54, and cooperated in enforcing Washington State Quarantine, No. 7. This work showed that all these quarantines were being violated.

2. Since the close of the spring quarantine work, quarantine No. 54 has been extended to cover the entire state of Washington.

3. During the fall of 1922, only quarantine No. 54 was enforced. The reasons for this are as follows:

(a) Scouting during the season of 1922 has shown that western Washington is quite generally infected.

(b) Due to the mild winters in this region, Ribes leaves may persist through the winter. For the same reason, shipment of plants quite generally continues throughout the winter months, from October 1 to June 1.

(c) Western Washington is much nearer the commercial white pine stands of the West than the area east of the Mississippi River, and therefore represents a much more immediate potential danger.

4. For the above reasons it was considered advisable to use the funds available for quarantine enforcement for enforcing quarantine No. 54, instead of quarantine No. 26.

5. Work on the Mississippi Valley line was financed on funds from the eastern appropriation. Four men were stationed at the most important points this fall. More men will be used on this eastern line in spring inspection in 1923.





## SUMMARY OF INVESTIGATIVE WORK

The disease is widespread on Ribes in the Puget Sound region of Washington and on Ribes and western white pine in western British Columbia and at Revelstoke and Beaton at the northern limits of the commercial western white pine stands. The disease was introduced previous to 1911. Dry growing seasons retard the spread of blister rust and wet seasons greatly accelerate. All the western Ribes so far found in association with diseased pines are susceptible to infection although in varying degree. Overwintering on Ribes has apparently occurred in the very wet mild climate along the coast of Washington. Spread of the disease directly from pine to pine does not occur. Western white pine is subject to very severe injury. It seems to be more susceptible than eastern white pine. As yet no satisfactory data are available on the distance and rate of spread of each kind of spore.

The discovery of blister rust at Revelstoke, British Columbia, in a large measure nullified the value of the results of the barrier study, since Revelstoke is east of the dry belt. The dry belt extending north and south through Oregon, Washington and British Columbia should be an effective barrier in most places. However from just south of the international boundary to the Okanogan lake region is the weak spot and the disease could undoubtedly cross there during a favorable season. No barrier exists to the spread of the rust south to the sugar pine region of southern Oregon and California except that the Columbia River near its mouth will act as a temporary check.



# I. INTRODUCTION

Discovery of Blister Rust in the West. The white pine blister rust (Cronartium ribicola Fischer) was found in southwestern British Columbia and northwestern Washington during the late autumn of 1921. This disease was not previously known to occur in the Pacific Coast or Rocky Mountain regions. These regions contain extensive stands of mature and second growth western white pine (Pinus monticola) and sugar pine (P. lambertiana). The amount of standing merchantable timber of these two species in million board feet, and its general distribution as given by the United States Forest Service are as follows:

TABLE 1.

Species	: North :	:	United States					
	: America :	Canada :	Montana :	Idaho :	Washington :	Oregon :	California :	
Western White Pine	: 24,755 :	2,700 :	855 :	19,805 :	820 :	900 :	175 :	
Sugar Pine	: 35,016 :	:	:	:	:	5016 :	20,000 :	
Total	: 59,771 :	2,700 :	855 :	19,805 :	820 :	5916 :	20,175 :	

At a stumpage value of \$2.50 per thousand board feet, this timber has an actual value, as it stands in the forests, of \$149,427,500. In addition to its value as standing timber the value to the general community is, however, approximately \$1,045,952,500 as each thousand board feet of lumber that is manufactured represents an expenditure of \$15 to \$16 in payrolls and supplies.

The above figures take into account only the mature white pine timber. The crop of second growth and reproduction representing future timber on these same areas has a potential value many times the value of the mature growth of today.

The presence of blister rust in the West constitutes a direct menace to these stands of white pine, especially to the immature growth. Large areas in these western regions contain scattering white pines, which, although of slight commercial value, would serve to carry the disease to the commercial stands. Wild and cultivated currants and gooseberries (Grossulariaceae) are also very numerous in the West. These facts make it evident that the disease, if unimpeded in its natural progress, would eventually reach the western white pine stands of Idaho and the sugar pine stands of California and that tremendous damage would result.

Information gained by scouting in the autumn of 1921, and for four years previous to this date, indicated that the disease was not generally prevalent in the West, and that it was probably confined to the area lying west of the summit of the Cascade ridge in British Columbia and Washington.



Portland Blister Rust Conference. On December 19, 1921, a conference was called at Portland, Oregon, by Professor H. P. Barss, Western Commissioner of the American Phytopathological Society. This conference was attended by state, provincial and federal employees, timber owners, nurserymen, representatives of the transportation companies, and others. At this conference the presence of blister rust in the West was recognized as a menace to the western stands of white pine. It was felt imperative that prompt and energetic action be taken to stamp out the disease if possible or to impede its progress if eradication did not prove feasible.

The recommendations of this conference were that the following program should be carried out by the federal, provincial, state and private interests:

1. That the spread of the disease by artificial means should be checked by establishing and enforcing quarantines preventing the movement of its host plants (5-leaf pines, currants, and gooseberries) from out of the potentially infected territory.
2. That a study should be made of the natural factors in the West which might favor or inhibit the natural spread of the disease.

It was further recommended by the conference that Congress appropriate \$150,000 to cover the work necessary by the Federal Government in the above program.

Allotment of Federal Funds. On March 21, 1922, an appropriation by Congress of \$150,000 was made available for the federal portion of this program. An allotment of these funds was made by the Secretary of Agriculture according to the following projects and amounts:

1. For scientific study of factors influencing the spread of the disease and for experimental local control-----	\$ 16,000
2. For scouting in the white pine and sugar pine regions to determine the extent of the disease-----	91,011
3. For a field survey to determine whether natural or artificial barriers to the spread of the disease exist-----	8,000
4. For cooperating with the Federal Horticultural Board to adequately enforce Federal Quarantines Nos. 26 and 54-----	20,489
5. For miscellaneous expenses in Washington and in the field, including rental of field office, stenographic and clerical assistance, supplies and equipment-----	14,500
Total	\$150,000

Organization for Directing Work under Federal Fund. Mr. S. B. Detwiler, Forest Pathologist in charge of the Office of Blister Rust Control in the Bureau of Plant Industry, U. S. Department of Agriculture, was assigned by the Chief of the Bureau of Plant Industry to carry out the provisions set up in the general allotment of funds for the western blister rust work by the



Secretary of Agriculture. Since the field work centered in the Northwest, the field station of the office was changed from Berkeley, California to 429 Lyon Building, Seattle, Washington. Under the general supervision of Mr. Detwiler, the Seattle station, in charge of Mr. G. B. Posey, directed the scouting for the disease (Project 2) and the enforcement of Federal Blister Rust Quarantines (Project 4).

To avoid duplication of force and equipment, the direction of investigational phases of the work on the blister rust problem (Projects 1 and 3) were placed under the Office of Investigations in Forest Pathology in charge of Dr. Haven Metcalf. The western field work has been carried on under the supervision of the Portland field station of that office in charge of Dr. J. S. Boyce.

Contents of Report. This report covers the activities of the Office of Blister Rust Control, Bureau of Plant Industry, U. S. Department of Agriculture, in carrying out the provisions of the above projects between March 21, 1922, and January 31, 1925. The general program as carried on is outlined. Results to January 31, 1923 are reported.

## II.

### PROJECT 1. - INVESTIGATIONS

The major portion of the work under Project 1 was carried on under the direction of the Office of Forest Pathology. As a part of this project, however, local control experiments were carried on in Idaho, under the direction of the Office of Blister Rust Control. The results of this work have been covered in the report made by Mr. C. A. Petrie. The costs of this work are included in the financial report.





III.  
PROJECT 2. - SCOUTING AND ERADICATION

1. Summarization of Plans for Scouting and Eradication

Situation at Beginning of 1922 Scouting Season. The general scouting for blister rust which had been carried on in the West from 1917 to 1920 inclusive had shown that the disease was not prevalent in the western United States. Scouting in western Washington during the late fall of 1921 had located the disease only at several points in the Puget Sound region. But as this scouting was done after most of the Ribes were defoliated, it was not considered as giving a true delimitation of the area of infection.

The first information necessary in order to cope with the western blister rust situation was an accurate knowledge of the distribution of the disease. In order to acquire this information it was necessary to institute a thorough search for it, throughout the West.

Cultivated Black Currant Best Indicator in Scouting for Disease. Inasmuch as native white pines and Ribes occur in the West over very large areas of rough, mountainous country, it was recognized as manifestly impossible, with the funds and time at disposal, to locate and inspect all the white pines and Ribes in the West, or even a hundredth part of them. It was considered necessary to use as indicators host plants which were known to be highly susceptible to infection at maximum distances from infected pines.

For the above purpose the cultivated English black currant (Ribes nigrum) was considered most suitable. Technical investigation, which had been invariably borne out by field observation in the eastern states, showed that this species was about 16 times as liable to infection as any of the cultivated red currants or gooseberries, and about 4 times as liable to infection as any wild species of Ribes that had been tested. Field observations in the East had showed that this species was almost invariably the first in any community to show the disease. Also, as it occurs in the West only as a cultivated plant, inspection of this species could be made more rapidly and with less expenditure of time and money than inspection of any wild species. Furthermore, the cultivated black currant is recognized as the most active agent in establishing and spreading the disease, and for this reason it was deemed important to locate and secure the destruction of these plants wherever found in the West. In localities where the black currant had not been extensively planted, other species of wild or cultivated currants and gooseberries would be used as indicators. In conjunction with the scouting on currants and gooseberries a thorough examination was to be made for the disease on white pine, especially in localities where traces of the disease were found on Ribes.

Territory to be Covered and Forces Involved. On the above basis it was planned to cover the several western states as thoroughly as practicable, searching for traces of the disease on pines and Ribes. This work was carried forward by federal, state, and privately organized forces working in close cooperation to accomplish the desired results. The general assignment of this phase of the western blister rust problem was as follows:



1. Intensive and extensive scouting for the disease to be performed by a special blister rust force of the Federal Bureau of Plant Industry under funds provided for the purpose.
2. Eradication of diseased or potentially diseased plants by the State Department of Agriculture or other state office having supervision over such regulatory matters.
3. General scouting by other state and private organizations with such assistance from the federal blister rust force as seemed necessary. For the accomplishment of the work the several organizations were expected to select, train and direct an adequate field force.

Development of Federal Blister Rust Scouting Force. A force of eight men who had had several years field experience with the blister rust problem, and who were well acquainted with conditions in the western states was secured. The remainder of the scouting force was selected from among technically trained men who lived in the West. A number of these were selected from the best trained students in the western universities and colleges. During the spring semester, special courses dealing with blister rust work were given by the pathologists to forestry and agricultural students at the following colleges and universities: University of Washington, Seattle; State College of Washington, Pullman; University of Idaho, Moscow; Oregon Agricultural College, Corvallis. After appointing the scouting force it was divided into groups and each group assigned to field work under close supervision of an experienced blister rust scout. When this course of training was completed the scouts were taken to the infected area at Abbottsford, B. C. where they were shown the disease on both pines and Ribes and given additional training in how to recognize the disease. Intensive and extensive scouting was carried on by this force of specially trained scouts in Washington, Idaho, Montana, Oregon and California.

Order of Importance of Territory to be Covered. The immediate need for scouting the several regions of the West was governed by (a) proximity to known infection and continuity of host plants extending from this infected region, (b) importance of the white pine forests, (c) importance of centers where pines and Ribes have been planted and the nearness of such centers to native pine stands. In consideration of these points, the following general regions are designated in order of importance:

1. Washington west of the Cascade ridge, adjacent counties in northern Oregon, and adjacent British Columbia on the north.
2. Washington east of Cascade ridge, northern Idaho and western Montana.
3. Coast region of Oregon.
4. Northern and mountain region of California.
5. Other Rocky Mountain regions eastward.



## 2. Scouting and Eradication in Washington

Scouting and eradication in Washington were carried on by federal, state, and private forces. The following cooperative agreement between the Washington Department of Agriculture and the Bureau of Plant Industry appor-tions this work between the federal and the state departments. The quarantine orders issued by the Washington Department of Agriculture restrict shipments of pines and Ribes and order the eradication of the cultivated black currant (Ribes nigrum).

### COOPERATIVE AGREEMENT PRESCRIBING BASIS FOR FEDERAL WORK

MEMORANDUM OF UNDERSTANDING BETWEEN THE WASHINGTON STATE DEPARTMENT OF AGRICULTURE AND THE BUREAU OF PLANT INDUSTRY, UNITED STATES DEPARTMENT OF AGRICULTURE RELATIVE TO COOPERATIVE WORK ON THE CONTROL OF WHITE PINE BLISTER RUST IN WASHINGTON.

EFFECTIVE MAY 15, 1922 TO MARCH 31, 1923.

The object of this memorandum of understanding shall be to facilitate the prompt location and eradication or effective control of white pine blister rust in Washington, in view of the threatened destruction of private, state and nationally owned timber throughout the West as a result of the presence of this disease in British Columbia and the danger of its further spread by natural dissemination or quarantine violations.

It is agreed that the Washington State Department of Agriculture and the Bureau of Plant Industry shall cooperate to the above ends in accordance with the following plans:

1. The Bureau of Plant Industry shall pay the salaries and expenses of five or more men who shall perform necessary scouting for the disease in Washington. The Washington State Department of Agriculture shall deputize these scouts to enable them to enter and inspect any property but not to destroy plants.

2. In view of the fact that the Washington State Department of Agriculture has no special appropriation for blister rust control, the Bureau of Plant Industry shall pay the salaries and expenses (in accordance with the fiscal regulations of the United States Department of Agriculture) of five or more men who shall be deputized by and work under the authority and direction of the Washington State Department of Agriculture to locate and secure the general destruction of cultivated black currant plants (Ribes nigrum) growing in the counties of Whatcom, San Juan, Skagit, Island, Snohomish, King, Kitsap, Mason, Jefferson, and Clallam, as specified in State Quarantine No. 7, and in such other portions of the State of Washington, as the Washington State Department of Agriculture may direct. These men shall also destroy host plants diseased with or exposed to infection from white pine blister rust, as directed by the Washington State Department of Agriculture.





3. The Washington State Department of Agriculture and the Bureau of Plant Industry shall cooperate in the strict enforcement of State and Federal blister rust quarantines now in effect or which may be promulgated. The Bureau of Plant Industry shall pay the salaries and expenses and direct the work of five or more men who shall during the proper season inspect for violations of the Federal blister rust quarantines in the State of Washington. These men shall also cooperate with the Washington State Department of Agriculture in enforcing State quarantines. For this purpose they shall receive instructions in methods of procedure from the Washington State Department of Agriculture and shall be deputized to destroy plants shipped in violation of State quarantines.

4. The Washington State Department of Agriculture shall use its regular employees, so far as their other duties permit, in locating and destroying cultivated black currants and infected or potentially infected blister rust host plants; in scouting for the blister rust; in inspecting nurseries for this disease and in enforcing State and Federal blister rust quarantines. Such work will aggregate approximately 5000 man hours, representing a total expenditure on the part of the Washington State Department of Agriculture of about \$2500 for the control of this disease. It is also understood that other State Departments of Washington cooperating with the Washington State Department of Agriculture will contribute for similar work approximately 50,000 man hours on the part of their regular employees, representing an additional expenditure by the State of Washington of approximately \$17,500 for blister rust control work. The expenditures of the Bureau of Plant Industry indicated in previous paragraphs will aggregate approximately \$40,000, but none of the Federal funds shall be spent in compensation for plants destroyed in control work.

5. All official records showing work performed under this agreement shall be open to inspection of the Washington State Department of Agriculture or the Bureau of Plant Industry on request. All findings of the blister rust made by either the Washington State Department of Agriculture or the Bureau of Plant Industry shall be promptly reported to the other party. All specimens collected or received by the Washington State Department of Agriculture which are suspected or known to be infected with blister rust shall be submitted to the Bureau of Plant Industry for critical determination. The Bureau of Plant Industry shall give such technical information to the employees of the Washington State Department of Agriculture as will enable them to recognize the several stages of the disease.

6. It is understood that the Bureau of Plant Industry shall be primarily responsible for scouting and location of the blister rust in Washington and for technical information on its control, but that the Federal government has no authority to destroy private or state property and therefore the Washington State Department of Agriculture shall be wholly responsible for the destruction of such pine, currant and gooseberry plants as may be found necessary in





order to control the spread of this disease in Washington, including plants shipped in violation of State and Federal blister rust quarantine regulations.

7. This memorandum of understanding shall take effect May 15, 1922 and continue in force until March 31, 1923, or until previously terminated by mutual consent of the parties concerned.

SIGNATURES:

Date May 15, 1922

E. L. French

Director of Washington  
State Department of Agriculture.

Date June 22, 1922

E. F. Kellerman

Chief, Bureau of Plant Industry  
United States Department of  
Agriculture.

WASHINGTON QUARANTINE ORDER NO. 7 DIRECTING PROHIBITION OF BLACK  
CURRENT IN PUGET SOUND REGION

Pertaining to White Pine Blister Rust in Washington.

WHEREAS: the fact has been determined that a dangerous and injurious disease known as the White Pine Blister Rust (*peridermium Strobilalis*) exists west of the Cascade Mountains near Puget Sound in the State of Washington, and,

WHEREAS: there is danger of the introduction of this disease into the white pine forests of the State of Washington through shipments of five-leaved pines and currants (especially black currants) and gooseberry plants. (See Quarantine #2).

NOW, THEREFORE, I, E. L. French, Director of Agriculture of the State of Washington, by virtue of the authority vested upon me by Chapter 105 Session Laws of 1921, do hereby declare and proclaim a quarantine prohibiting the shipment or movement in Washington of all White Pine (*Pinus strobus*) Stone Pine (*P. cembra*) Limber Pine (*P. flexilis*) or any other five-leaved pines, currants and gooseberry plants (*Ribes* and *Grossularia*) within or from that part of the State of Washington lying west of the crest of the Cascade Mountains, through or into the rest of the State of Washington. In addition since the English Black Currant (*Ribes nigrum*) is an especially dangerous host of the White Pine Blister Rust, the destruction is hereby ordered of all such black currant plants found growing in the counties of Whatcom, San Juan, Skagit, Island, Snohomish, King, Pierce, Kitsap, Mason, Jefferson, and Clallam.

All Horticultural Inspectors are hereby required and instructed to intercept any shipment or movement in the State of Washington of five-leaved Pines, currants and gooseberry plants above mentioned, and to condemn and destroy any black currants found growing in counties mentioned.



If any such articles as hereinbefore mentioned are moved or grown in the State of Washington in violation of this quarantine they must at once be destroyed or returned to the shipper at his expense. Any violation of these orders will be dealt with according to law.

This quarantine shall take effect on and after March 1, 1922.

(Signed) E. L. French.

Director of Agriculture

Approved by:

Louis F. Hart,

Governor.

Dated: January 24, 1922.

Olympia, Washington.

QUARANTINE ORDER NO. 12 PERMITTING MOVEMENT OF RED CURRANTS AND  
GOOSEBERRIES FROM LICENSED AND INSPECTED NURSERIES TO POINTS WITHIN  
WASHINGTON

Amendment to White Pine Blister Rust in Washington. (No. 7)

WHEREAS: after careful investigation no White Pine Blister Rust has been found on any currants (except cultivated English Black Currants) or gooseberries in this state, and,

WHEREAS: there seems to be little danger of spreading the disease by shipment of these plants from inspected licensed nurseries,

NOW, THEREFORE, I, E. L. French, Director of Agriculture of the State of Washington, by virtue of the authority vested upon me by Chapter 105, Session Laws of 1921, do hereby declare and proclaim Quarantine No. 7 pertaining to White Pine Blister Rust in Washington to be amended to permit the shipment, when completely defoliated, of all currants (except cultivated Black currants--*Ribes nigrum*) and gooseberries from licensed and inspected nurseries to points within the State of Washington

All Horticultural Inspectors are hereby required and instructed to intercept any shipment or movement of currants or gooseberries in violation of this amendment.

This Quarantine shall take effect on and after September 1, 1922.

(Signed) \_\_\_\_\_

E. L. French

DIRECTOR OF AGRICULTURE.

Approved:

LOUIS F. HART;

Governor.

Dated: August 18, 1922.

Olympia, Washington



WASHINGTON QUARANTINE ORDER NO. 15 DIRECTING ERADICATION OF BLACK  
CURRANT IN WHOLE STATE

Second Amendment to White Pine Blister Rust Quarantine in Washington,  
(No. 7.)

WHEREAS: it has been determined that there is an alarming increase in the infection of the White Pine Blister Rust (peridermium Strobilalis) found on cultivated Black Currants not only in the Puget Sound area but also in other parts of the State, and,

WHEREAS: though the Black Currant is not commercially important its cultivation is apt to spread the disease,

NOW, THEREFORE, I, E. L. French, Director of Agriculture of the State of Washington, by virtue of the authority vested upon me by Chapter 105, Session Laws of 1921, do hereby declare and proclaim Quarantine No. 7 pertaining to White Pine Blister Rust in Washington to be amended so that the destruction is hereby ordered of all cultivated Black Currants found growing in any part of the State.

All Horticultural Inspectors are hereby required to condemn and destroy any Black Currants found growing in violation of this Quarantine Order.

This Quarantine shall take effect on and after September 15, 1922.

(Signed) E. L. French

Director of Agriculture.

Approved by:

Louis F. Hart,  
Governor.

Date: September 15, 1922.  
Olympia, Washington.

Division of State from Standpoint of Scouting and Eradication. In considering the problem of locating the disease in Washington, the state naturally divides into two general regions, differing in proximity to the known infection, climate, density of population, and number of cultivated black currants. These are as follows:

1. Western Washington - comprising those counties west of the Cascade ridge. Infection was known to occur in this region, and because of the moist climate and large number of cultivated black currants, wild and cultivated Ribes of other species, and wild and cultivated white pines, this entire region was necessarily considered as potentially infected, until definite information could be gained to the contrary.

2. Eastern Washington - comprising those counties lying east of the Cascade ridge. A region of sparse population containing relatively few cultivated black currants or white pines. Native white pines occur



plentifully on the east slopes of the Cascades and in extreme eastern Washington, but not elsewhere in this region. No infection was known to occur in eastern Washington.

Forces Involved. To adequately cover these two regions in the search for blister rust the following forces were used.

1. A group of federal scouts specially trained for blister rust work under supervision of the Office of Blister Rust Control carried on intensive and extensive scouting in western Washington, and located the black current plantings. A second group of these scouts carried on extensive scouting in eastern Washington.

2. A force of state and federal men, working under the direction and authority of the Washington Department of Agriculture, secured the destruction of the cultivated black currants in western Washington.

3. An auxiliary scouting force comprising state and private forestry organizations, the U. S. Forest Service, Boy Scouts, etc. carried on extensive scouting for the disease throughout the entire state.

Intensive Scouting by Trained Federal Blister Rust Scouts in Western Washington. This work consisted of a property to property search for the cultivated English black current and a close inspection of planted and native white pines. All roads and trails throughout the country covered were traveled. Two groups of eight technically trained scouts were used, one group covering Whatcom, Skagit, San Juan, Island, Inghamish and King Counties, and the other covering Clallam, Jefferson, Kitsap, Mason, Pierce, Grays Harbor, Pacific, Wahkiakum, Lewis, Cowlitz, Clark and Skamania Counties. Each group of scouts was supervised by two experienced men, one acting as supervisor, and the other acting as head scout.

Training and Direction of Scouts. Both groups of scouts were assembled at Seattle where they were drilled for several days in methods of finding and distinguishing the several kinds of host plants and of recognizing the disease. For the training, a portion of the city was laid off in sections and two to four scouts assigned under the direct supervision of a trained scout to cover each section. During this training period the black currants were located and inspected in about a fourth of Seattle. After completing the preliminary training, the entire group of scouts was taken to an out-break area near Abbotsford, B. C., and put through a brief period of field scouting in the infected pines and hibes under the supervision of Professor Ellsworth Bethel and his assistants. From here they traveled direct to the points in the field where they were to begin actual scouting. The supervisor and head scout for each group studied the country to be covered and allotted certain portions of the work to each of their scouts. After having started the scouts to work, the supervisor's and head scout's time was divided among the crew, checking on the thoroughness of each man's work and giving detailed instructions concerning it. The scout went from property to property locating and inspecting the blister rust host plants, interviewing property owners where practicable and explaining the nature of the blister rust disease and also transmitting a copy of the following by Director French to growers of black currants.







STATE OF WASHINGTON  
DEPARTMENT OF AGRICULTURE  
OLYMPIA  
July 10, 1922

To The Growers of Black Currents:

As you probably have heard the dreaded White Pine Blister Rust disease has been discovered in the Northwest - particularly in British Columbia but also in a number of places in western Washington. This disease has done millions of dollars damage to White Pine forests in the East and is also well established in White Pine just across the line in British Columbia. If it gets a start in the large stands of White Pine in Washington and Idaho or the Sugar Pine of Oregon it will kill millions of dollars worth of timber and prevent young trees from growing.

Fortunately, however, this disease is peculiar because in order for it to spread from one pine to another it must first go to a currant or gooseberry bush and go thru one stage in its growth there. It may spread from one currant or gooseberry bush to another before it goes to a pine but it cannot spread direct from one pine to another. It also happens that the disease grows and spreads much better on the cultivated Black Currant than on any other kind--in fact in almost every case where the disease has been found in the Northwest on a currant it has been a Black Currant.

It is true that there is little commercial White Pine in western Washington but there is enough so that the disease could spread direct to the more valuable stands. It is therefore necessary to do everything possible to stamp out the disease and prevent its spread.

There is now a federal quarantine in force to prevent shipments of plants that would carry the disease out of western Washington and also a state quarantine to prevent such shipments and as the cultivated Black Currant is especially dangerous, it also provides that they be grubbed up. Fortunately also it so happens that these Black Currents are not extensively grown and are not of much commercial importance so that their value is very small compared with that of the timber which is menaced.

Will you not therefore voluntarily pull up your cultivated Black Currents so as to do your part in preventing the spread of the disease and make it unnecessary for this department to go through the legal process that might be used to get them removed.

Very truly yours,

E. L. French,

Director of Agriculture.

By this system of scouting all counties in Washington west of the Cascades were covered except portions of King, and Pierce. In many instances



the owners of the black currants were willing to cooperate and responded by either destroying their black currant plants or authorizing the scout to pull them out.

Eradication of Black Currants by State Department of Agriculture. As will be noted from the above copy, Quarantine Order No. 7, State of Washington, orders the destruction of all cultivated black currants in western Washington. In order to accomplish this, a force of well trained men was organized under the direction and authority of the Washington Department of Agriculture, and put into the field to secure the eradication of these plants. The work of these men began about the same time that the scouting was started. In general, the eradication crew followed the scouting crews, securing the eradication of all black currants which were located by the scouts, and locating and removing any additional plantings, which were overlooked by the scouts. At the beginning of the work no location work had been done, so that <sup>the</sup> eradication crew both located and eradicated the black currants in a portion of Whatcom County. Due to shortage of funds, the location crews were discharged before King and Pierce Counties were completed. Therefore, the remainder of the location work in these counties will <sup>be</sup> done by the eradication crew or by members of the blister rust force. The eradication work was carried on under the direct supervision of Mr. C. L. Robinson, Supervisor of Horticulture, Washington Department of Agriculture, and Mr. C. O. Weiss, District Horticultural Inspector.

The following tables give the results of the location and eradication work. See Tables I and II.

General Scouting and Reinspection of Wild and Cultivated Ribes. A considerable portion of the location work had been done early in the season, before the disease had had time to develop on the Ribes. Also, the nature of this work had made it difficult to inspect a desirable number of wild Ribes for the presence of the disease. For these reasons it was considered advisable to reinspect the cultivated black currants in those counties where eradication was not completed, as well as a large number of wild Ribes. This work was carried on by selected men from the location crews, and was done after the first autumn rains. As a result of this, infection was found at numerous points in western Washington where it had not been evident at the time the location work was done. The following table gives the definite results of this work.

TABLE III.  
Record of General Scouting in Western Washington

County	Man	Scout	Days	Black Currants Examined	Plantings	White Pines Examined	Planted Pines	Native No.	Per. Mile	Wild Ribes No.	Total Ribes	Total Pines
Clallam	28	1139	23	1600	12	18	700	8	2640	4240	718	
Clarke	5	287	15	83					.2	75	158	
Cowlitz	2	87	4	124					.4	54	158	
Grays Harbor	6	250	8	40	5	6	0		.5	105	145	6



TABLE III. (Continued)  
Record of General Scouting in Western Washington

County	Days	Black Currents Examined	Black Planted	White Planted	White Examined	Wild Ribes Examined	Wild Ribes Planted	Inspection Stands	Inspection Miles	Total No.	Total Ribes	Total Pines
Jefferson	29	1344	34	215	9	27	792	6	2088	2103	819	
King	9	817	7	30	3	4	3	15.2	350	360	7	
Kitsap	14	1091	15	60	3	3	0	2	840	900	5	
Lewis	4	277	8	36				.5	118	154		
Mason	9	554	14	128	0	0	24	1	1060	1208	54	
Pierce	1	70	1	1	0	0	0	10	220	221	0	
Skagit	3	429	1	8	6	12	0	7	560	568	12	
Skamania	3	122	3	13			29	2	156	169	29	
Snohomish	3	180	1	6			250	.5	75	75	250	
Thurston	8	376	35	140	2	2	0	.12	20	170	2	
Whatcom	7	1071	2	10	15	20	550	4	840	850	580	
Total	131	8094	171	2494	33	102	2358		9211	11699	2460	

Scouting in Eastern Washington. The scouting problem in eastern Washington was to determine if possible whether or not the blister rust occurred at any point east of the Cascade ridge. The vastness of the area prohibited a property to property canvass for the location and inspection of the cultivated black currants. To cover the entire area, it was necessary to use a system of more extensive scouting. This was done by crisscrossing the area, placing the scouting trails as close together as practicable. The travel in this work was necessarily done by automobile. Along the roads traveled all black currants were located and inspected. In addition to the inspection of the cultivated black currants, inspections consisting of at least twenty-five other cultivated or wild currants or gooseberries were made at intervals of two miles or more. By this method of procedure the entire region was covered.

During the latter part of August, when the Canadian scouts reported the presence of the disease in the vicinity of Levelstoke and Beaton, British Columbia, a more intensive system of scouting was used in the tier of counties bordering the Canadian line. This scouting was also supplemented by fairly intensive scouting for a suitable distance north of the Canadian line in order to determine whether or not the disease was present in Canada east of the Cascades in close proximity to our line.





TABLE I.

INTENSIVE SCOUTING AND BLACK CURRANT ERADICATION IN  
WESTERN WASHINGTON, JUNE 1, 1922 TO JANUARY 31, 1923.

County Clallam Population 11368 Area 1726 Sq. Miles.

Work Performed By :			Cultivated Black Currants :			White Pines		
: Man : Road :			Located :			Eradicated :		
: Supervi-: Days : Miles :			Plant-:			Plant-:		
Crew	sion	Employed:	Covered:	ings	Plants:	ings	Plants:	ings
Scouting	Federal	66	1127	103	2289	6	13	57
Eradication:	State	21	731	6	365	74	1912	5
Owner						29	729	
TOTAL		87	1858	109	2654	109	2654	62

County Clarke Population 32805 Area 634 Sq. Miles.

Scouting	Federal	85	1402	68	319	10	28	15
Eradication:	State	20	637	3	6	54	269	1
Owner						7	28	
TOTAL		105	2039	71	325	71	325	16

County Cowlitz Population 11791 Area 1153 Sq. Miles.

Scouting	Federal	35	729	20	197	2	8	
Eradication:	State	4	328	1	5	17	176	
Owner						2	18	
TOTAL		39	1057	21	202	21	202	





TABLE I. (Continued)

County Grays Harbor Population 44745 Area 1869 Sq. Miles.

Work Performed By :			Cultivated Black Currants :				White Pines			
: Man : Road :			Located :		Eradicated :		Cultivated :			
: Supervi-: Days : Miles :			Plant-:		Plant-:		Plant-:		Native	
Crew	sion	Employed:	Covered:	ings	Plants:	ings	Plants:	ings	Trees:	Stands
Scouting	Federal	61	993	221	2418			6	7	
Eradication:	State	25	880	12	280	228	2665			
Owner						4	32			
TOTAL		86	1873	233	2698	232	2697	6	7	

County Island Population 5489 Area 208 Sq. Miles.

Scouting	Federal	72	2410	92	547	39	178	7	18	9
Eradication:	State	17	397			50	364			
Owner						3	5			
TOTAL		89	2807	92	547	92	547	7	18	9

County Jefferson Population 6557 Area 1805 Sq. Miles.

Scouting	Federal	52	746	60	308	1	4	17	88	6
Eradication:	State	12	549			48	276			
Owner						11	28			
TOTAL		64	1295	60	308	60	308	17	88	6

County Kitsap Population 33162 Area 371 Sq. Miles.

Scouting	Federal	88	1324	155	824	5	15	67	131	15
Eradication:	State	33	914	5	61	81	576			
Owner						74	294			
TOTAL		121	2238	160	885	160	885	67	131	15



TABLE I. (Continued)

County King Population 389273 Area 2111 Sq. Miles.

Work Performed By		: Cultivated Black Currants		: White Pines	
: Man	: Road	: Located	: Eradicated	: Cultivated	: Native
: Supervi-	: Days	: Miles	: Plant-	: Plant-	: Plant-
Crew	: sion	: Employed	: Covered	: ings	: Plants
: Federal	: 81	: 247	: 483	: 2312	: 8
: State	: 410	: 5821	: 1126	: 9978	: 1060
: Owner	: 491	: 6068	: 1609	: 12290	: 1097
: TOTAL	: 491	: 6068	: 1609	: 12290	: 1097
: 35	: 70	: 281	: 3		

County Lewis Population 36840 Area 2369 Sq. Miles.

: Federal	: 112	: 1752	: 116	: 4093	: 4
: State	: 27	: 807	: 2	: 8	: 105
: Owner	: 139	: 2559	: 118	: 4101	: 117
: TOTAL	: 139	: 2559	: 118	: 4101	: 117
: 11	: 3	: 3			

County Mason Population 4919 Area 930 Sq. Miles.

: Federal	: 20	: 875	: 15	: 138	: 14
: State	: 20	: 875	: 15	: 138	: 15
: Owner	: 20	: 875	: 15	: 138	: 15
: TOTAL	: 20	: 875	: 15	: 138	: 15
: 135	: 1	: 2	: 3		

County Pacific Population 14891 Area 895 Sq. Miles.

: Federal	: 44	: 1082	: 111	: 1433	: 7
: Scouting	: 18	: 757	: 1	: 4	: 101
: Owner	: 62	: 11839	: 112	: 1437	: 111
: TOTAL	: 62	: 11839	: 112	: 1437	: 111
: 29	: 1395	: 8	: 3		



TABLE I. (Continued)

County Pierce Population 144127 Area 1701 Sq. Miles.

Work Performed By		Cultivated Black Currants		White Pines	
Man	Road	Located	Eradicated	Cultivated	
Supervi-	Days	Miles	Plant-	Plant-	Plant-
Crew	sion	Employed	Covered	ings	Plants
				ings	Plants
				ings	Trees
					Stands
Scouting	Federal	83		512	24359
				16	89
					22
					49
Eradication	State	96	2126	181	11242
				116	424
Owner					
				60	32693
TOTAL		179	2126	693	35601
				192	33206
					22
					49

County San Juan Population 3605 Area 178 Sq. Miles.

Scouting	Federal	58	278	105	628	16	39	2	2	1
Eradication	State	18	77	5	27	88	598	3	3	1
Owner						6	18			
TOTAL		76	355	110	655	110	655	5	5	2

County Skagit Population 33373 Area 1774 Sq. Miles.

Scouting	Federal	208	3165	279	1287	3	12	90	173	10
Eradication:	State	75	1913	7	38	269	1280			
Owner						14	33			
TOTAL		283	5078	286	1325	286	1325	90	173	10

County Skamania Population 2357 Area 1685 Sq. Miles.

Scouting	Federal	11	373	3	13	3	13	1	10000	1
Eradication	State									
Owner										
TOTAL		11	373	3	13	3	13	1	10000	1





TABLE I. (Continued)

County Snohomish Population 67690 Area 2064 Sq. Miles.

Work Performed By				Cultivated Black Currants		White Pines					
		Man	Road	Located	Eradicated	Cultivated					
Supervi-		Days	Miles	Plant-	Plant-	Plant-					Native
Crew		sion	Employed	Covered	ings	Plants	ings	Plants	ings	Trees	Stands
Scouting	Federal	246	4239	671	3776	27	62	287	681	12	
Eradication	State	153	3203	19	217	581	3544				
Owner						82	387				
TOTAL		399	7442	690	3993	690	3993	287	681	12	

County Thurston Population 22366 Area 709 Sq. Miles.

Scouting	Federal	103	1811	134	4685	37	151				
Eradication	State	23	785	1	6	86	2393				
Owner						5	76				
TOTAL		126	2596	135	4691	128	2620				

County Wahkiakum Population 3472 Area 267 Sq. Miles.

Scouting	Federal	20	25	20	125	18	56				
Eradication	State	7		19	2020	20	2087				
Owner						1	2				
TOTAL		27	25	39	2145	39	2145				

County Whatcom Population 50600 Area 2082 Sq. Miles.

Scouting	Federal	202	3200	552	3769	65	408	180	334	7	
Eradication	State	362	9927	327	3340	570	4911				
Owner						243	1190				
TOTAL		564	13127	879	7109	878	6509	180	334	7	

1. Introduction

The purpose of this study is to investigate the effects of various factors on the growth of plants. The study was conducted over a period of six weeks, during which time the plants were observed and measured at regular intervals. The results of the study are presented in the following sections.

2. Materials and Methods

The plants used in this study were of the same species and were grown in identical conditions. The only variable was the amount of water they received. The plants were divided into two groups: one group received a normal amount of water, while the other group received a reduced amount. The plants were measured at the beginning and end of the study, and the results were compared.

3. Results

The results of the study show that the plants that received a reduced amount of water grew significantly slower than the plants that received a normal amount of water. This was evident from the measurements taken at the beginning and end of the study. The plants that received a normal amount of water were taller and had more leaves than the plants that received a reduced amount of water.

4. Conclusion

The study concludes that the amount of water a plant receives has a significant effect on its growth. Plants that receive a normal amount of water grow faster and are healthier than plants that receive a reduced amount of water. This finding is important for understanding the needs of plants and for developing strategies to improve plant growth.



TABLE I. (Continued)

County Totals: Total Population 919432 Total Area 24531 Sq. Miles.

Work Performed By :			Cultivated Black Currants :				White Pines		
: Man : Road :			: Located :		: Eradicated :		: Cultivated :		
Crew	Supervi-	Days	Miles	Plant-	Plant-	Plant-	Native		
	sion	:Employed:	Covered:	ings	Plants:	ings	Plants:	ings	Trees:Stands
Scouting	Federal	1647	25778	3720	53520	281	1286	825	11894: 67
Eradication:	State	1321	29852	1715	27597:	3548	36266	75	171: 4
Owner						582	35815		
TOTAL		2968	55630	5435	81117:	4411	73367	900	12065: 71



1923.

COUNTY	How Worked	Per Plant	Popula- tion Per Man Day	Sq.Miles Per Man Day	Popula- tion Per Sq.Mile
Clallam	2 Crews	0.30	131	19.8	6.6
Clarke	" "	2.95	312	6.0	51.7
Cowlitz	" "	1.88	302	29.6	10.2
Grays Harbor	" "	0.30	520	21.7	23.9
Island	" "	1.63	62	2.3	26.4
Jefferson	" "	1.90	102	28.2	3.6
King	1 Crew	0.44	198	3.2	184.4
Kitsap	2 Crews	1.24	274	3.1	89.4
Lewis	" "	0.31	266	17.0	15.6
Mason	" "	1.57	246	46.5	5.3
Pacific	" "	0.43	240	14.4	16.6
Pierce	1 Crew	0.05	268	1.2	84.7
San Juan	2 Crews	0.95	47	2.3	20.3
Skagit	" "	1.92	118	6.3	18.8
Skamania	" "	8.60	214	153.2	1.4
Snohomish	" "	0.90	170	5.2	32.8
Thurston	" "	0.44	174	5.6	31.5
Wahkiakum	1 Crew	0.10	129	26.3	13.0
Whatcom	2 Crews	0.81	89	3.7	24.3
TOTAL		0.37	179	7.6	37.5

\* App





TABLE III.

## SUMMARY OF BLACK CURRANT ERADICATION WORK IN WESTERN WASHINGTON, JUNE 10, 1922 TO JANUARY 31, 1923.

COUNTY	: Blk. Currants: : : : : : : :								: Black Currants Located and Eradicated : Cost Per : : :								: Popula-: Sq. Miles: Popula-:		
	: Eradicated : : : : : : : :								: Per Man Day : Per 1000 Pop.: Per Sq. Mile : : : : Popula-: Sq. Miles: Popula-:								: tion Per: Per : tion Per		
	How	Plant-	Man:	Road:	Popula-	Area in:	Total	Plant-	Plant-	Plant-	Plant-	Plant-	Plant-	Plant-	Plant-	Plant-	Man Day:	Man Day:	Sq. Mile
	Worked:	ings	Plants:	Days:	Miles:	-tion	Sq. Miles:	Cost	ings	Plants:	ings	Plants:	ings	Plants:	ings	Plant:	Man Day:	Man Day:	Sq. Mile
Clallam	: 2 Crews:	109 :	2654:	87:	1858:	11,368:	1726 :	\$804.50:	1.3 :	30.5 :	9.6 :	233.5:	.063 :	1.54 :	\$7.48:	\$0.30:	131 :	19.8 :	6.6
Clarke	: " "	71 :	325:	105:	2039:	32,805:	634 :	956.13:	.7 :	3.1 :	2.2 :	9.9:	.11 :	.51 :	13.47:	2.95:	312 :	6.0 :	51.7
Cowlitz	: " "	21 :	202:	39:	1057:	11,791:	1153 :	376.97:	.5 :	5.2 :	1.8 :	17.1:	.02 :	.18 :	17.95:	1.88:	302 :	29.6 :	10.2
Grays Harbor	: " "	232 :	2697:	86:	1873:	44,745:	1869 :	797.90:	2.7 :	31.4 :	5.2 :	60.7:	.12 :	1.44 :	3.44:	0.30:	520 :	21.7 :	23.9
Island	: " "	92 :	547:	89:	2807:	5,489:	208 :	888.98:	1.1 :	6.1 :	16.8 :	100.0:	.44 :	2.63 :	9.66:	1.63:	62 :	2.3 :	26.4
Jefferson	: " "	60 :	308:	64:	1295:	6,557:	1805 :	586.57:	.9 :	4.8 :	9.2 :	4.7:	.03 :	.17 :	9.78:	1.90:	102 :	28.2 :	3.6
King	: 1 Crew :	1097 :	9618:	491:	6068:	389,273:	2111* :	4218.81:	2.2 :	19.2 :	11.3 :	98.8:	.69 :	6.08 :	3.85:	0.44:	198 :	3.2 :	184.4
Kitsap	: 2 Crews:	160 :	885:	121:	2238:	33,162:	371 :	1093.68:	1.3 :	7.3 :	4.8 :	26.7:	.43 :	2.39 :	6.84:	1.24:	274 :	3.1 :	89.4
Lewis	: " "	117 :	4095:	139:	2559:	36,840:	2369 :	1255.51:	.9 :	29.5 :	3.2 :	111.2:	.05 :	1.73 :	10.73:	0.31:	266 :	17.0 :	15.6
Mason	: " "	15 :	138:	20:	875:	4,919:	930 :	217.57:	.75 :	7.0 :	3.0 :	28.0:	.02 :	.15 :	14.50:	1.57:	246 :	46.5 :	5.3
Pacific	: " "	111 :	1432:	62:	1839:	14,891:	895 :	610.83:	1.8 :	23.1 :	7.5 :	96.2:	.12 :	1.60 :	5.50:	0.43:	240 :	14.4 :	16.6
Pierce	: 1 Crew :	192 :	33206:	179:	2126:	144,127:	1701* :	1531.60:	1.1 :	185.5 :	4.0 :	691.2:	.90 :	155.90:	7.98:	0.05:	268 :	1.2 :	84.7
San Juan	: 2 Crews:	110 :	655:	76:	355:	3,605:	178 :	610.37:	1.4 :	8.6 :	30.5 :	181.7:	.62 :	3.68 :	5.55:	0.95:	47 :	2.3 :	20.3
Skagit	: " "	286 :	1325:	283:	5078:	33,373:	1774 :	2546.55:	1.0 :	4.7 :	8.6 :	39.7:	.16 :	.75 :	8.90:	1.92:	118 :	6.3 :	18.8
Skamania	: " "	3 :	13:	11:	373:	2,357:	1685 :	111.78:	0.3 :	1.2 :	1.3 :	5.5:	.002 :	.01 :	37.26:	8.60:	214 :	153.2 :	1.4
Snohomish	: " "	690 :	3993:	399:	7442:	67,690:	2064 :	3610.88:	1.7 :	10.0 :	10.2 :	56.5:	.34 :	1.93 :	5.23:	0.90:	170 :	5.2 :	32.8
Thurston	: " "	128 :	2620:	126:	2596:	22,366:	709 :	1158.26:	1.0 :	20.8 :	5.7 :	117.1:	.18 :	3.70 :	9.05:	0.44:	174 :	5.6 :	31.5
Wahkiakum	: 1 Crew :	39 :	2145:	27:	25:	3,472:	267 :	209.48:	1.4 :	79.5 :	11.2 :	617.8:	.15 :	8.03 :	5.37:	0.10:	129 :	26.3 :	13.0
Whatcom	: 2 Crews:	878 :	6509:	564:	13127:	50,600:	2082 :	5294.08:	1.6 :	11.5 :	17.3 :	128.6:	.42 :	3.13 :	6.03:	0.81:	89 :	3.7 :	24.3
TOTAL	: :	4411 :	73367:	2968:	55630:	919,432:	24,531 :	\$26880.45:	1.5 :	24.7 :	8.3 :	137.8:	.19 :	3.25 :	\$6.09:	\$0.37:	179 :	7.6 :	37.5

\* Approximately 1/4 of King County (97,318) has been completed by population, January 31, 1923.

" 3/4 " " " (1,583 Sq. Miles) has been completed by area, " " "

" 1/4 " Pierce County (48,042) has been completed by population, " " "

" 1/8 " " " (213 Sq. Miles) has been completed by area, " " "



"	1/6	"	"	(218 Sq. Miles) has
"	1/4	"	"	Pierce County (48,042) has been a
"	3/4	"	"	(1,552 Sq. Miles) has
* Approximately 1/4 of King County (97,318) has been cov-				

The following table shows the results of the scouting in Eastern Washington.

TABLE IV.  
Record of General Scouting in Eastern Washington

County	Days	Man	Black Currents Examined	Plants	White Pines Planted	Plants	Other Cultivated	Plants	Ribes	Ribes	Total	Total	Total	Total
Adams	2	202					7	64	25	89				12
Asotin	8	98	1	1	1	25	1	25	25	51	25			6
Benton	1	65	3	31			5	75		106				9
Chelan	64	1286	8	527		200	10	286	550	1366	200			36
Columbia	9	358	5	58			3	57		115				20
Douglas	14	558					7	165	525	690				29
Franklin	8	288					5	105		105				6
Garfield	4	150					1	25	50	75				5
Grant	14	537					11	161	75	256				17
Kittitas	53	559	17	62		61	24	385	576	1024	61			69
Klickitat	21	421					5	76	175	251				13
Lincoln	6	463					7	83	176	259				14
Okanogan	67	1027	12	64		75	18	292	1600	2156	75			82
Spokane	16	221	6	151	2	2	50	9	189	100	420	52		17
Stevens	4	205	1	2			1	6	25	33				2
Walla														
Walla	14	968	5	58	2	2	25	2	50	25	133	27		15
Whitman	19	550	3	52	8	260	100	15	314	229	595	360		31
Yakima	67	1296	7	1953	5	62	100	12	318	1225	3496	162		66
Ferry	1	114							25	25				1
2 cars														
5 scouts	392	9366	68	2940	18	351	611	141			11242	962		450

W. J. Bach - R. H. Eddy - M. D. Moll - G. B. Sartoris - L. N. Goodding

Scouting by Auxiliary Forces. In addition to the scouting and eradication work described above, extensive scouting was carried on by a number of other organizations. An effort has been made to instruct these organizations by means of literature, circular letters, specimens and personal interviews.

The following points have been emphasized to these organizations.

1. The life history, destructiveness and importance of the disease.
2. Inspection of all currants, gooseberries and white pine for the disease.
3. Importance of black currants and consequently the necessity for their location and inspection.





4. Location and inspection of all planted white pine.
5. Reporting of any suspicious material for examination.

TABLE V.  
Educational Work among Auxiliary Scouting Forces in Washington

Organizations			Educational Material Distributed							
			No.							Riker
			Total No:	Inter-		Bul.:	Bul.:	Form	Form	Mounts
Name	Members:	viewed:	Posters:	226:	742:	Letters:	Reports:	Ribes:	Pine	
U.S.Forest:										
Service	86	22	86	86	0	172	78	44	8	
Wash.State:										
Forest										
Service	291	107	291	291	0	1164	1545	20	0	
Boy										
Scouts	2000	65	125	0	125	175	2000	0	0	
Girl										
Scouts	768	2	48	0	48	96	720	0	0	
Camp Fire										
Girls	1568	1	225	0	225	446	1345	0	0	
Lumbermen	971	25	971	750	0	971	0	0	0	
Total	5684	222	1744	1157	386	3224	5688	64	8	

The Forest Service of the Federal Government, besides inspection for the disease, is making an extensive survey and mapping all of the wild currants, gooseberries and white pine in the national forests in Washington. This information will be very valuable in combating the natural spread of the disease.

The Washington State Forestry Service has been very active as emphasized by the number of reports and specimens that have been received by this office.

The other organizations shown in the table have given active co-operation in searching for the disease.

Nursery Inspection. During the scouting season of 1922 it was considered advisable to thoroughly inspect the various nurseries of Washington. This was done for the following purposes:

1. To ascertain if these nurseries contained black currants or white pines.
2. To determine if these plants were infected.
3. To determine if any shipments of these plants had been made from any nursery in which blister rust infection occurred, and if so to locate and destroy the shipment.



4. To explain the blister rust quarantine regulations to the nurserymen and enlist their cooperation in making these regulations effective.

In the 67 nurseries inspected in Washington, 34 were found to have black currants, representing a total of 6,822 bushes, and 13 to have white pines consisting of 337 trees. One nursery in the coast region of Washington was found infected.









GENERAL TALK OF INFECTION, WATCH, JULY 1, 1922 TO JANUARY 31, 1923.

Only 1 white pine infection found: at Blaine, White County, in July.







TABLE VII.

COUNTY	Cultivated Host Plants Infected												Wild Host Plants Infected				Grand Totals			
	English Black Currant				Cultivated Red Currant				Total Cultivated Currants				Wild Host Plants Infected				Grand Totals			
	Plants in:		In- : % of :		Plants in:		In- : % of :		Plants in:		In- : % of :		Plants in:		In- : % of :		Grand Totals			
	Plants	Infected	Plants	Infected	Plants	Infected	Plants	Infected	Plants	Infected	Plants	Infected	Plants	Infected	Plants	Infected	Plants	Infected		
was Found	ings	Plantings	Plants	Infected	ings	Plantings	Plants	Infected	ings	Plantings	Plants	Infected	Species	Places	amined	Plants	Infected	Places	Plants	
Clallam	3	21	1936	58	3.0%	1	2	2	22	1938	60	3.0%	G.divaricata	2	2			31	70	
													R.bracteosum	7	8					
Grays Harbor	2	3	1160	105	9.1%	1	2	2	100.0%	4	1162	107	9.2%					4	107	
Island	1	7	122	19	15.6%				7	122	19	15.6%						7	19	
													G.divaricata	1	1					
Jefferson	3	12	125	44	35.2%				12	125	44	35.2%	R.bracteosum	24	68			37	113	
King	1	1	10	5	50.0%				1	10	5	50.0%						1	5	
Kitsap	3	7	53	32	60.4%	1	10	2	20.0%	8	63	34	54.0%	R.bracteosum	7	12		15	46	
Mason	1	1	6	1	16.7%				1	6	1	16.7%						1	1	
Pacific	2	10	745	255	34.2%				10	745	255	34.2%						10	255	
Pierce	1												R.bracteosum	1	1			1	1	
San Juan	2	10	120	31	25.8%	1	3	1	33.0%	11	123	32	25.8%					11	32	
Skagit	5	7	181	15	8.3%	2	8	3	37.5%	9	189	18	9.5%	R.bracteosum	3	81	3	3.7%	12	21
Snohomish	1	2	10	2	20.0%				2	10	2	20.0%						2	2	
Whatcom	5	30	460	150	32.6%				30	460	150	32.6%	R.bracteosum	8	10			38	160	
													G.divaricata	3	3					
													R.bracteosum	50	102					
TOTALS		111	4928	717	14.5%	6	25	10	40.0%	117	4953	727	14.7%		53	105		170	832	

TABLE VIII.

[illegible]

[illegible]

Number of:	Cultivated Host Plants
Countries:	Cultivated Red Cross
: in which:	: Plants in : % of :



TABLE IX.

## BLACK CURRANT INFECTION

COUNTY	:Total Black Currants:		:Infected Black Currants:		:% of Plantings:		:% of Plants	
	: Plantings	: Plants	: Plantings	: Plants	: Infected		: Infected	
Clallam	: 109	: 2654	: 21	: 58	: 19.2%		: 2.2%	
Grays Harbor	: 233	: 2698	: 3	: 105	: 1.3%		: 3.9%	
Island	: 92	: 547	: 7	: 19	: 7.6%		: 3.5%	
Jefferson	: 60	: 308	: 12	: 44	: 20.0%		: 14.3%	
King	: 1609	: 12,290	: 1	: 5	: .06%		: .04%	
Kitsap	: 160	: 885	: 7	: 32	: 4.4%		: 3.6%	
Mason	: 15	: 138	: 1	: 1	: 6.7%		: .7%	
Pacific	: 112	: 1437	: 10	: 255	: 8.9%		: 17.7%	
San Juan	: 110	: 655	: 10	: 31	: 9.1%		: 4.7%	
Skagit	: 286	: 1325	: 7	: 15	: 2.4%		: 1.1%	
Snohomish	: 690	: 3993	: 2	: 2	: .3%		: .05%	
Whatcom	: 879	: 7109	: 30	: 150	: 3.4%		: 2.1%	
TOTALS	: 4355	: 34,039	: 111	: 717	: 2.6%		: 2.1%	



AUXILIARY SCOUTING IN WASHINGTON  
By C. R. Stillinger

The employees of the fire protective associations and private patrol districts, together with the state and the Weeks Law employees constitute the state Forest Fire Service. All of this work is under the direct supervision of Mr. F. E. Pape, State Supervisor of Forestry, Olympia, Washington. Mr. T. S. Goodyear, Olympia, Washington is general inspector, while Mr. C. C. Joy, 949 Henry Building, Seattle, Washington, is chief fire warden for western Washington.

Table I shows the classification and location by counties of the men in the organization. The organization consists of 20 district fire wardens, 19 county fire wardens, 82 local state wardens, 78 logging camp wardens and 92 association men, making a total of 291 who patrol about 10,000,000 acres.

On June 26 a conference was held with Mr. Pape and Mr. Joy to determine the procedure which should be followed to instruct the men in the State Forest Fire Service regarding blister rust so that they could scout intelligently for the disease during the season. As a result the following procedure was agreed upon:

1. About July 1st all men in the State Forest Fire Service should be supplied with available literature consisting of a blister rust poster, report forms (10 report forms to district fire wardens and 5 to others in the organization), instructions for using the form, a letter of instructions to these men from Mr. Pape and one from the Office of Blister Rust Control, Seattle, Washington.

2. All district fire wardens should be sent, by the Office of Blister Rust Control, specimens of the disease on black currants.

3. A blister rust man, Mr. Seltzer, commissioned as deputy fire warden by Mr. Pape, should scout in the association and give instructions regarding the life history and seriousness of blister rust to as many of the men as he could come in contact with during his scouting and interviews with other foresters.

4. All specimens and reports from the organization were to be sent to Mr. Pape and then forwarded to this office for examination.

Table 1 gives in detail an analysis of the State Forest Fire Service, the literature distributed consisting of a poster, Bulletin 226, report forms, (Exhibit 4), instructions, (Exhibit 3), letters from Mr. Pape, (Exhibit 1), letters from the Office of Blister Rust Control, (Exhibit 2 and Exhibit 5), mounts of the Blister Rust on black currant leaves, the number of individuals instructed and the number of reports and specimens that have been sent in to this office by the men in the State Forest Fire organization. (Form letters used are referred to as Exhibits in this report. Copies are attached).

Table II shows the men in the State Forest Fire Service who have sent in reports of scouting and specimens for examination.



Table 1.

Location	: Classification and:							: Literature Distributed							: Re-					
	: Number of Men							:	:	:	:	:	:	:	:	: sults				
	District	County	Local State	Logging Camp	Wardens	Associations	Totals	Blister Rust	Ribes Mounts	Posters	Exhibit 1	Exhibit 2	Exhibit 3	Exhibit 4	Exhibit 5	Bulletin 226	Personal	Instruction	Specimens	Reports
Chelan	: 0 :	2 :	0 :	1 :	0 :	3 :	3 :	1 :	3 :	3 :	3 :	3 :	15 :	3 :	3 :	0 :	0 :	1 :		
Clallam	: 2 :	0 :	15 :	0 :	9 :	26 :	1 :	26 :	26 :	26 :	26 :	130 :	26 :	26 :	5 :	1 :	4 :			
Clarke	: 1 :	1 :	2 :	3 :	3 :	10 :	1 :	10 :	10 :	10 :	10 :	55 :	10 :	10 :	0 :	3 :	5 :			
Cowlitz	: 0 :	1 :	3 :	2 :	7 :	13 :	0 :	13 :	13 :	13 :	13 :	65 :	13 :	13 :	2 :	0 :	4 :			
Ferry	: 0 :	1 :	1 :	0 :	0 :	2 :	0 :	2 :	2 :	2 :	2 :	10 :	2 :	2 :	0 :	0 :	0 :			
Grays Harbor	: 1 :	0 :	3 :	11 :	6 :	21 :	1 :	21 :	21 :	21 :	21 :	110 :	21 :	21 :	1 :	0 :	2 :			
Island	: 0 :	1 :	0 :	0 :	0 :	1 :	0 :	1 :	1 :	1 :	1 :	5 :	1 :	1 :	0 :	0 :	0 :			
Jefferson	: 1 :	0 :	3 :	0 :	4 :	8 :	1 :	8 :	8 :	8 :	8 :	45 :	8 :	8 :	1 :	3 :	3 :			
King	: 2 :	2 :	7 :	13 :	14 :	38 :	2 :	38 :	38 :	38 :	38 :	200 :	38 :	38 :	2 :	1 :	5 :			
Kitsap	: 0 :	1 :	0 :	0 :	2 :	3 :	0 :	3 :	3 :	3 :	3 :	15 :	3 :	3 :	1 :	0 :	0 :			
Klickitat	: 0 :	1 :	0 :	0 :	1 :	2 :	0 :	2 :	2 :	2 :	2 :	10 :	2 :	2 :	0 :	0 :	3 :			
Kittitas	: 0 :	1 :	2 :	2 :	0 :	3 :	0 :	3 :	3 :	3 :	3 :	15 :	3 :	3 :	0 :	0 :	0 :			
Lewis	: 1 :	0 :	5 :	11 :	12 :	29 :	1 :	29 :	29 :	29 :	29 :	150 :	29 :	29 :	7 :	0 :	1 :			
Mason	: 0 :	1 :	1 :	0 :	2 :	4 :	0 :	4 :	4 :	4 :	4 :	20 :	4 :	4 :	0 :	0 :	1 :			
Okanogan	: 0 :	1 :	1 :	0 :	0 :	2 :	0 :	2 :	2 :	2 :	2 :	10 :	2 :	2 :	0 :	0 :	2 :			
Pacific	: 1 :	0 :	3 :	0 :	2 :	6 :	1 :	6 :	6 :	6 :	6 :	35 :	6 :	6 :	2 :	0 :	4 :			
Pend Oreille	: 1 :	0 :	11 :	3 :	1 :	16 :	1 :	16 :	16 :	16 :	16 :	85 :	16 :	16 :	50 :	2 :	4 :			
Pierce	: 1 :	1 :	4 :	7 :	4 :	17 :	1 :	17 :	17 :	17 :	17 :	90 :	17 :	17 :	3 :	0 :	1 :			
San Juan	: 0 :	1 :	0 :	0 :	0 :	1 :	0 :	1 :	1 :	1 :	1 :	5 :	1 :	1 :	0 :	0 :	0 :			
Skagit	: 1 :	0 :	4 :	7 :	6 :	18 :	1 :	18 :	18 :	18 :	18 :	95 :	18 :	18 :	7 :	5 :	9 :			
Skamania	: 1 :	0 :	3 :	2 :	0 :	6 :	1 :	6 :	6 :	6 :	6 :	35 :	6 :	6 :	1 :	1 :	5 :			
Snohomish	: 2 :	1 :	4 :	15 :	10 :	32 :	3 :	32 :	32 :	32 :	32 :	170 :	32 :	32 :	15 :	1 :	6 :			
Spokane	: 1 :	0 :	0 :	0 :	0 :	1 :	0 :	1 :	1 :	1 :	1 :	5 :	1 :	1 :	0 :	0 :	0 :			
Stevens	: 1 :	1 :	5 :	0 :	0 :	7 :	1 :	7 :	7 :	7 :	7 :	40 :	7 :	7 :	0 :	0 :	0 :			
Thurston	: 2 :	0 :	1 :	1 :	3 :	7 :	2 :	7 :	7 :	7 :	7 :	45 :	7 :	7 :	4 :	0 :	0 :			
Wahkiakum	: 1 :	0 :	1 :	2 :	2 :	6 :	1 :	6 :	6 :	6 :	6 :	35 :	6 :	6 :	0 :	0 :	1 :			
Whatcom	: 1 :	1 :	3 :	0 :	4 :	9 :	1 :	9 :	9 :	9 :	9 :	50 :	9 :	9 :	6 :	0 :	0 :			
Total	: 20 :	19 :	82 :	78 :	92 :	291 :	20 :	291 :	291 :	291 :	291 :	1545 :	291 :	291 :	107 :	17 :	61 :			
Date of Distribution							July 24	July 1	July 1	July 15	July 15	July 15	Sept. 14	Sept. 17						





TABLE II.

Scouting Reports of Men in Washington State Forest Fire Service.

Name	Address	Territory Scouted				No.	No.
		Section	T.	R.	General	Re-ports	Speci-mens
					Southern part of Grays		
					Harbor & north part of		
					Pacific.		
J. B. Lyon	Cosmopolis					1	
E. F. Gillies	Raymond	26-23-14	14	6		1	
		12	14	7		1	
Welfer Dickson	Sedro Woolley	30-2-5-5-6	35	5E		1	
					8 miles N. S. E. W. of		
C. Demarest	Washougal				Washougal	1	
		1-36	3N				
Wm. Goepel	Stevenson	1-36	2N	7E		1	
R. A. Rock	Ariel	27-14	6	2E		1	
F. L. Pape	Hamilton	23-24	35N	6E		1	1
John McNorton	Vader					1	
Geo. M. Landon	Aberdeen				All his district	1	
Henry Knutson	Skykomish				District 290	1	
E. L. Persons	Sauk				All district	1	
I. P. Vane	Okanogan				Entire County	1	
Ed Gustafson	Oso				District 111	1	
Hoover Hanley	Amboy				All district	1	
Laurent Webb	Eldon				County	1	
Geo. Near	Metalline Falls				District	1	
W. A. Brewer	Yacolt				"	1	
Just Floodman	Marysville					1	
	Bryant					1	
J. L. Pape	Hamilton	16	35	7		1	1
Earl Beeman	Hazel				Sauk River	1	1
Arthur Linder	Newport	20	31	44		1	1
J. F. Pape	Hamilton	13	35	6		1	1
L. B. Price	North Bend	N <sup>1</sup> <sub>2</sub>	24N	8E	Beaver & Tokul Creek	1	
		S <sup>1</sup> <sub>2</sub>	25N	8&9E	North Fork Snoqualmie R.		
Cliff Wilson	Forks				All district	1	
					Hamilton Cr.-Donovan		
M. Woodard	Moffetts				Dubois Lumber Co.	1	
Frank Galbreath	Hamilton	14	35	6E		1	1
J. L. Pape	"	10	35	7E		1	1
Oral D. Cusick	St. Helens				All district	1	
E. L. Northrup	Clearwater				All district	1	1
John C. Hanley	Amboy				All district	1	
H. L. Lincoln	Metalline					1	1
Wm. Goepel	Stevenson	17	3N	7E		1	1
		30	3N	7E			
Total of this page						34	10



TABLE II. Continued

Scouting Reports of Men in Washington State Forest Fire Service.

Name	Address	Territory Scouted				No.	No.
		Section	T.	R.	General	Re-ports	Speci-mens
					Amount Prot. Forward	64	10
E. E. Wiss	Shelton	7	20	3		1	
		9	20	2			
		4	21	2			
		7	22	1			
		18	21	5			
John C. Drueger	Port Angeles				District	1	
					First Creek, Harold		
Geo. Goman	Winesap	4	27	21	Watson ranch.	1	
		6	26	21			
Welfer Dickson	Sedro-Woolley				District	1	
A. F. Pridgeon	Seattle				"	1	
E. Oberg	Port Angeles		29	9		1	1
Chas. F. Johnson	Enunclaw				"	1	1
William Goepel	Stevenson				All District	1	
E. B. Crippen	Clearwater	20	24E	12W		1	1
E. L. Northrup	"					1	1
E. L. Baker	Newport				All District	1	
Nightingale	Eatonville	36	15	6	Two days	1	
Edmiston	Gold Bar				All District	1	
Welfer Dickson	Sedro-Woolley	5	34	5E		1	
					All district, southeast-		
E. Routh	Cougar				ern Cowlitz County	1	
E. W. Redding	Selleck				All district, King Co.	1	
					All district, western		
E. L. Hewitt	Appleton				Klickitat County	1	
E. E. Edmiston	Gold Bar				All district, Snohomish		
					County	1	
			10, 18, 7,				
			26, 25, 14.	14	6		
E. F. Gilties	Raymond		12	14	7	2	
					All dist. southeastern		
					Cowlitz-north of Lewis		
James Hanley	Cougar				& to Kalama River		
					All dist. northeastern		
					Clallam Co. south of		
Chas. Johnson	Seki				Clallam Bay	1	
A. Mathiesen					All dist. Wahkiakum Co.	1	
A. Brewer					All dist. Western Skamania	1	
Peter Conboy	Fernwood				District, Klickitat	1	
Louis Thum	Underwood				E. Skamania SW Klickitat	1	
John C. Hanley	Conboy	35	6	3E	Clarke, Mo. Fork River		
		27	6	2E	Cowlitz	1	3
		27	6	2E	30 mi. along Lewis River		
Total						61	17



Ribes mounts of the summer stage of the white pine blister rust were sent to the following fire wardens in Washington on July 24th, 1922.

A. E. Schaller, Wenatchee  
V. A. Brewer, Yacolt  
A. H. Thomas, Leland  
J. B. Allen, North Bend  
F. G. Crawford, Menlo  
R. H. Bullis, Buckley  
Duncan McKay, Big Lake  
Geo. Cass, Sultan  
Frank Rutledge, Little Rock  
Oscar Lygrenson, Skanokawa  
G. C. Joy, 949 Henry Bldg., Seattle.

Robert Coombs, Beaver  
Frank Wedekind, Satsop  
Wm. Entwistle, Buckley  
V. C. Wallace, Chehalis  
Harry L. Baker, Newport  
V. W. Marshburger, Stevenson  
R. C. Merrifield, Sultan  
Jno. Howell, Colville.  
J. P. McElfresh, Olympia, R. 5, Box 104  
E. R. Christie, 210 Chestnut St.,  
Bellingham

The blister rust men who were scouting and doing the personal instruction work in the organization carried with them specimens of the disease on current leaves and on pine as well as pictures of the disease. Part of the time of these men was devoted to interviewing lumbermen, county agents, county horticultural inspectors, boys' and girls' organizations as well as Forest Service men. Mr. A. J. Seltzer carried on the work in the region of Washington west of the Cascades, while Mr. F. A. Brown did similar work in northeastern Washington. The latter half of July and all of August was given to this work. The work these instructors endeavored to accomplish may be grouped under six main heads as follows:

1. Show the men specimens of the disease and explain its life history and seriousness.
2. Teach the men how to look for the disease.
3. Instruct the men how to identify the local gooseberries and currants from other plants.
4. Scout for the disease in the association.
5. Collect and make records of the wild currants and gooseberries he observed on the association land.

These objects have been accomplished by walking in the case of Mr. Brown while Mr. Seltzer made use of an automobile where possible. 62 fire wardens were interviewed in addition to some of the men instructed in eastern Washington who were only temporary fire fighters and consequently their names were not taken.

#### Scouting done by Mr. Seltzer in Washington Forest-Fire Association

The scouting done by Mr. Seltzer consisted in observations from his auto along the way and inspections along the roads and streams wherever Ribes or pine were found. Further, in communities where stops were made, some black currants as well as native ribes and pine, if present, were inspected. He scouted 3377 road miles in western Washington.





Scouting in Washington Forest-Fire Service Territory Done by F. A. Brown

Mr. Brown traveled from point to point by train. He scouted in vicinity of following towns.

June 28	Newport		
July 30	Newport	Diamond Lake	12 miles
31	Newport	Ione	
August 1	Ione		
2	Ione	Metalline Falls	
3	Metalline Falls		
	Usk		
4	Usk		

Total number of points scouted	65
Total road mileage scouted	3412

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STATE OF WASHINGTON DEPARTMENT OF CONSERVATION AND DEVELOPMENT  
Olympia, July 1, 1922.

TO ALL COMMISSIONED FOREST OFFICERS OF  
STATE OF WASHINGTON.

The enclosed pamphlets and circulars concerning White Pine Blister Rust disease are being sent to all employees in the State Forest Fire Service and the State Department of Agriculture under an agreement between the said state departments and the United States Department of Agriculture, whereby we agreed to devote any spare time we may have outside of our state duties to the examination and inspection of five needle pines, gooseberries and currants, particularly the wild varieties, for the purpose of determining whether or not they are infected with this disease.

All fire wardens, patrolmen or rangers having commissions from this office and receiving compensation for their services either from the State, timber protective associations or lumbermen, are requested to make careful search for the disease. If any infection is found similar to that shown on cuts herewith, they should take samples thereof, fill out blank reports and forward same to this office.

We believe that much of this examination may be done in connection with your regular duties. Should there be a spell of weather when fires and other duties require little attention, you may devote sufficient time to make a thorough search for the disease. If you find no indications of the disease, please report to that effect.

Very truly yours,

F. E. . Pepe

STATE SUPERVISOR OF FORESTRY





UNITED STATES DEPARTMENT OF AGRICULTURE  
BUREAU OF PLANT INDUSTRY

Seattle, Washington,  
July 15, 1922.

To Forest Officers,  
State of Washington.

A pine killing disease called the White Pine Blister Rust threatens to spread from the Puget Sound country to the commercial stands of white and sugar pines that are worth more than a billion dollars in stumpage and payroll to the people of Washington, Idaho, Oregon and California. Over one-third of these pines are owned by the Federal and State governments.

The Blister Rust spreads from the five-needled pines to the leaves of currants and gooseberries. The dust-like spores are then carried from the currants and gooseberries to other pines which thus become infected. The disease cannot go directly from pine to pine.

In order to save the pines it is necessary to know (1) the location of every diseased five-needle pine, currant and gooseberry bush in the State; (2) the location of all five-needle pines whether they are merchantable or reproduction, heavy stands or scattered trees, in order to determine whether there are any natural barriers to the disease; (3) the relative abundance of the different wild kinds of currants and gooseberries; and (4) the location of planted currants and gooseberries, particularly the cultivated black currant because it is the most likely to be diseased and usually introduces the Blister Rust into a community.

Thanking you sincerely for the assistance I am sure you will render, I am,

Yours truly,

Assistant Pathologist.  
Control Pine Blister Rust  
B.P.I. - U. S. Dept. Agri.  
429 Lyon Bldg.,  
Seattle, Washington

Enclosures:

1. Letter from F. E. Pape, State Forester
2. Report blanks for your field notebook.
3. Directions for making out reports.
4. Colored poster giving story of disease.



INSTRUCTIONS FOR FILLING OUT BLISTER RUST REPORT.

I. Wild Currents, Gooseberries and White Pine.

A. Species. The particular kind of plant may be determined in either of two ways:

1. Indicate the specimen by a number and submit a specimen for that number so that the species can be determined.
2. Send in specimens with a number, the collector keeping a duplicate specimen bearing that number.  
Prompt determinations will be made and reported back.

B. No. per acre. Make a count on an acre plot if possible. Otherwise estimate.

C. Location. Give by Section (Sec), Township (Tp), and Range (R). Plot the areas on a township map if you have one and submit with your report.

D. Type of locality, swamp, stream, mountain, sloping east, west, north, or south, elevation.

E. Tree Association. Indicate the kinds of trees that grow nearby.

F. Burn, Logged-off or Natural State. Give age of burn or how long since being logged or whether in a virgin forest.

G. Diseased with Blister Rust. If you find anything that looks like the disease, state so in this column and send in specimens.

II. Cultivated Currents, Gooseberries, Black Currents and Planted White Pine. Any of these plantings may have been imported from a disease infected area and consequently may be the cause of introducing the disease. Inspect those at farms in your district, deserted places and mining camps. Watch especially for planted white pine and the cultivated black currants. Inspect them very carefully.

A. Location. Give the owner's name and address if possible and the location of the plants. If located in a town, give the location as accurately as possible. If at a deserted place, indicate township, section and range.

B. No. of plants in the planting. Indicate the number of plants of each kind that you find in the planting.

C. No. of plants diseased with B. R. Examine the plants carefully and report the number that appear to be diseased. Send in specimens of everything that may be the disease.



# FORM REPORT FOR BLISTER RUST CONTROL BY COOPERATING AGENCIES

COUNTY OF

192\_

## WILD CURRANTS, GOOSEBERRIES AND WHITE PINE

[illegible]

BY WHOM REPORTED.  
SEE OTHER SIDE

ADDRESS.

**Cultivated Currants (Cu.) Gooseberries (Gb.) Black Currants (Bl. Cu.) and Planted White Pine.**

[illegible]

REMARKS:



UNITED STATES DEPARTMENT OF AGRICULTURE  
Bureau of Plant IndustryBlister-Rust Control  
429 Lyon BuildingSeattle, Washington,  
September 14th, 1922.

Dear Sir:

I wish to report what has recently been learned concerning the white pine blister rust in the Pacific Coast regions and ask you further assistance in preventing this disease becoming a serious menace to our western white and sugar pine forests.

This destructive disease of the white pines was found for the first time in western North America late last fall when it was discovered at several points in southwestern British Columbia and northwestern Washington. Extensive scouting by the Canadian authorities during the present season shows that this disease is well established in British Columbia west of the Cascade Mountains and that it has already caused serious damage to the pines which have been infected for several years. Similar scouting by state and federal men indicates that it is rapidly spreading southward through western Washington.

Until recently it was believed that the disease had not spread to points east of the Cascades. However, last week it was found on cultivated English black currants and native white pines in the vicinity of Revelstoke and Beaton, B. C. These points are only about one hundred miles north of the international boundary and are in the northern edge of the great western white pine area which extends into Washington, Idaho, and Montana. It is now evident that the disease is spreading rapidly and unless hurriedly checked it will in a short while be established in the Inland Empire white pine stands. The disease has also recently been found on English black currants in the southwestern corner of Pacific County, Washington. This indicates a rapid southern spread along the coast region and directly threatens the sugar pine stands of Oregon and California.

In order to check the spread of the blister rust it is necessary to determine the extent of its present distribution immediately. At this season of the year it is most easily detected on the leaves of currant and gooseberry bushes. The English black currant is most susceptible and if carefully inspected now would very likely show the disease if it is present in the locality. You can help a great deal by examining the leaves of the currants and gooseberries in your locality, especially the English black currant leaves, and sending specimens of suspicious material to the State Supervisor of Forestry, Olympia, Washington or direct to this office for identification.

The fire hazard for the season having passed you will probably be able to devote more time to the blister rust scouting. Your full cooperation in combating this destructive pest will be greatly appreciated by all concerned.

For your information I am enclosing a copy of circular No. 226. In case you need additional information concerning the blister rust and its destructiveness in other pine regions, advise me.

Very truly yours,  
C. R. Stillinger,  
Pathologist





## SCHOOL CAMPAIGN IN WASHINGTON

(Confidential)

In accordance with the recommendation of the conference during June, plans were developed for a school campaign in Washington. On June 28, Mr. Stillinger and Mr. Seltzer went to Olympia to present the plan to Mrs. Josephine C. Preston, Superintendent of Public Instruction, and to the State Department of Agriculture. Since Mr. E. L. French, Director of Agriculture was out of town, the matter was taken up with F. H. Gloyd, Chief Assistant Director. Mr. Gloyd, upon learning our mission, called the Office of Superintendent of Public Instruction. Finding that Mrs. Preston was not in town, arrangements for a conference was made with the Deputy Superintendent of Public Instruction, Miss Blanch Nagle. At this conference were Mr. Gloyd, the Deputy Superintendent of Public Instruction, Mr. Seltzer and Mr. Stillinger.

Mr. Stillinger explained the following to be the objects of the school campaign.

1. Educate the teachers and pupils regarding the disease.
2. Ask them to search for the disease on currants, gooseberries, and white pine and to report any suspicious cases they might observe.
3. Report all plantings of black currants and planted white pine they could find.

Following this discussion the detailed school program as it had been worked out by Mr. Stillinger was presented. (Exhibits 1 to 8 inclusive.)

### Results of conference:

1. Mr. Gloyd appeared favorable, took a copy of the program and stated he would discuss the matter with Director French and that Mr. French would probably write me regarding the matter.
2. The Deputy State Superintendent of Public Instruction, Miss Blanch Nagle, appreciated what the school children could do and thought it a worthy piece of work in which the schools could effectively cooperate. However, she thought that this work should really be done by the State Extension Division instead of by the schools. During the course of the discussion she frankly admitted that her department was very willing to cooperate with the State Department of Agriculture, but did not care to cooperate with the State College and Extension Division. The reason for the latter fact was that on a previous occasion when they had done cooperative work with the State College and the Extension Division, they had received no credit for their part in the work. At the end of the conference she still felt that this was a work that the county agents should do, but stated that she would discuss the matter with Mrs. Preston and leave it entirely to her decision.



In further discussing the procedure of handling the campaign, it developed that the campaign must be handled through the county superintendents to the teachers rather than from the State Superintendent of Public Instruction to the teachers. As a result, the following procedure was determined upon as the one which would have to be followed.

1. Mrs. Preston to O. K. the plan and issue my letter to her (Exhibit 9) together with her indorsement in her regular monthly circular to the teachers. If this cannot be put in the July number, then secure here indorsement on the letter so that it may be mimeographed and sent with my letter to county superintendents.
2. After indorsement by Mrs. Preston letters will be issued to each county superintendent as per sample (Exhibit 10) with inclosed school campaign and letter for their indorsement (Exhibit 11).
3. After receiving the indorsement of the county superintendents, the letter (Exhibit 11) will be mimeographed by Office of Blister Rust Control at Seattle and at the proper time sent to the teacher with Exhibits 5 and 6 and the poster and franked envelope addressed to the Seattle office.

As a result of this conference and the above procedure the general plan as outlined in Exhibit 1 was changed in the following respects.

1. Due to impossibility of cooperation between Extension Division and Superintendent of Public Instruction (a) the letter to county agents (Exhibit 2) was omitted; (b) the replies were to be received by the Office of Blister Rust Control instead of by Dr. Heald. Hence, the return envelopes were addressed to this office and Dr. Heald's name was omitted from Exhibit 6, and Exhibit 12 was substituted.
2. Due to the nature of the school organization it was impossible to use the system of making the Superintendent of Public Instruction a collaboratory and have her send out the material direct. Consequently, Exhibit 11 was substituted for Exhibit 4 and the material was to be prepared and sent out from the Office of Blister Rust Control at Seattle.

On July 21 the new plan as above outlined was submitted to the State Department of Public Instruction. Again, Mrs. Preston, the Superintendent of Public Instruction was not present, consequently the matter was discussed with her deputy. She stated she would discuss the program with Mrs. Preston upon her arrival. She also recommended that I take up the matter personally with Mrs. Preston, upon her arrival. This concluded all of the dealings regarding the school campaign which I have had with the State Department of Public Instruction.

On July 21, since no word had been received from the State Department of Agriculture, the matter was taken up with them again. Since Mr. French was out of town, the program was discussed with Mr. C. L. Robinson, Supervisor of Horticulture. The program was explained to him. It was suggested that the district horticultural inspector might be able to talk in meetings of teachers and county superintendents during the week of the campaign. Also that Mr. French might issue a letter to accompany the program. Mr. Robinson seemed to be very favorable to the idea, stating that he would dis-



cuss it with Mr. French and that they would probably formulate a letter and mimeograph it so that it could be distributed to the teachers with the other school campaign material.

The next development in the situation was the receipt of the following letter from Mr. French.

July 22, 1922.

Mr. C. R. Stillinger,  
Assistant Pathologist,  
429 Lyon Building,  
Seattle, Washington.

Dear Sir:

I am enclosing herewith certain documents handed to me by our Mr. C. L. Robinson. I have to inform you that I do not care to participate in this program. If there is any real merit in scouting this sort of a program would discredit it. We do not care to be a party to it.

Yours very truly,

E. L. French,

Director of Agriculture.

After the receipt of this letter it was felt that possibly Mr. French did not clearly understand the idea and that consequently a personal conference with him might clear the way for his approval and participation in this program.

This conference between Mr. Stillinger and Mr. French took place at Yakima, Washington on July 25. From this conference the following points were evident.

1. Mr. French understood the idea.
2. He refused to be convinced of the feasibility of the program or even the desirability of the program.
3. He did not desire to cooperate in any work with the State Department of Public Instruction.

In a further effort to secure the approval and cooperation of Mr. French in this work, on August 3 the following letter was sent to him by Mr. Posey, Head of the Office of Blister Rust Control at Seattle, Washington.





August 5, 1922.

Senator E. L. French,  
Director of Agriculture,  
Olympia, Washington.

Dear Senator French:

I have just talked with Mr. Stillinger concerning the matter of securing the aid of public school children in Washington as part of the plan for scouting the state thoroughly for the blister rust. He advises me that you do not feel as though the information secured through this source would be very helpful.

I wish to explain our position in this matter. When Mr. Detwiler was in the West he reviewed the various aspects of the blister rust problem and instructed me to carry out the general plans for the work as outlined by the Blister Rust Conference at Portland in December, and in accordance with the cooperative agreements with the various western states. He also stated very plainly that the work in each state should be approved in advance by the State Department of Agriculture. Acting upon the recommendations of the Committee on Quarantines, etc., of the Portland Conference, of which I believe you were a member, I went ahead and secured the material to be used in the schools and have since made tentative arrangements for distributing it. In this I had assumed that the whole matter carried your approval.

As the matter now stands, Mr. Detwiler expects us to use every practicable means for locating the disease wherever it exists in the West. In light of the very successful results obtained by Mr. McCubbin in eastern Canada where he used school children as auxiliary blister rust scouts, we believe that good results may be obtained here in the West if we use a similar plan. Personally I am in favor of using the school children in this connection, but will not do so unless the plans for this work carry your approval.

I would greatly appreciate it if you will advise me what to do in this matter. Mr. Stillinger was assigned to carry out the details of this phase of the program and I am instructing him to hold up any plans for the school work in Washington until I have your further advice in the matter.

Sincerely,

G. B. Posey,

Forest Pathologist.

Mr. Posey received the following letter of August 7 in response to the above letter.



August 7, 1922

Mr. G. B. Posey,  
Forest Pathologist,  
429 Lyon Building,  
Seattle, Washington.

Dear Sir:

I am in receipt of your letter of August 3. The more I think about the school program the less sympathy I have for it. I am very sure the result would be anything but satisfactory. People do not look favorably upon school children coming to their private houses on errands of this kind. That may be all right with a Canadian but not with the average American. This department already has its share of complaints and grief by reason of visitations of adults. I feel very well satisfied with the program as it is now being put forward and I hope we will not inject anything into it that will discredit the work.

Yours truly,

E. L. French,

Director of Agriculture.

Upon telegraph instructions from Mr. Detwiler, Head of the Office of Blister Rust Control, Washington, D. C. further efforts to execute a school campaign in Washington were discontinued and the matter closed between the Seattle office and the State Department of Agriculture by the following letter from Mr. Posey to Mr. French on August 11.

Senator E. L. French,  
Director of Agriculture,  
Olympia, Washington.

Dear Senator French:

I wish to thank you for your letter of August 7 giving your opinion of the plan to use school children in connection with scouting for blister rust in Washington. We are cancelling all plans previously made in this matter, and will not use the school children as auxiliary scouts.

I am enclosing a copy of circular No. 226. A supply of this circular was sent direct to you or Mr. Robinson, from the Division of Publications. In the event that you need an additional supply, kindly advise me and I will send them from the supply on hand.

Sincerely,

G. B. Posey,

Forest Pathologist.



After the approval of the general plan by the State Department of Public Instruction, Mr. Seltzer, who was handling the field work with the agencies that were cooperating with this office in Blister Rust Control included on his itinerary all county and city superintendents. As a result of his efforts in explaining the disease, showing them specimens and then explaining the school program which it was proposed to put into effect, offers of cooperation and signatures to Exhibit 11 were secured from all with whom he conferred. Conferences were held and approval secured from the county superintendents of Whatcom, Skagit, Island, Snohomish, King, Pierce, Thurston, Lewis, Pacific, Cowlitz, Clarke and Skamania, and from the city superintendents of Bellingham, Seattle, Tacoma, Olympia and Centralia. Mr. Seltzer reports that practically all the superintendents were enthusiastic to have their pupils receive the literature and assist in the scouting.

No further work of this nature was done when we were unable to secure the cooperation and approval of the Director of the State Department of Agriculture in Washington.





School Campaign in Washington

- I. Campaign to be centered in week September 2 to 16 or 16 to 28.
- II. Plans to receive the O. K. of Mrs. Preston, Dr. Heald, Mr. French, and Chief, Bureau of Plant Industry, Post Office Department.
- III. During this week the cooperation of county agents to be asked by a direct letter of instruction from Dr. S. S. Nelson, Pullman, Washington, Head of the Extension Division (Exhibit 2).
- IV. Mrs. Preston to send letter to county superintendents (Exhibit 3). County superintendents or state superintendent to take up the matter with superintendents, principals, and teachers.
- V. Mrs. Preston to send letter to all teachers (Exhibit 4) and form report to be filled in by teacher (Exhibit 5). Also colored circular No. 226 with attached statement (Exhibit 6) and large poster.
- VI. All return letters to go to Dr. Heald.
  1. Mail to be handled by Dr. Heald's assistant.
  2. Dr. Heald's assistant will examine all specimens, record replies, and refer doubtful material to Dr. Heald, and file information in systematic way for the information of the Blister Rust Office.
  3. Dr. Heald's assistant will make a special report on the results of the campaign at the end of each week.
  4. Requests for special information to be referred to Dr. Heald.
  5. Keep accurate check of all replies and send out follow-up postcard in cases where replies have not been received in due time (one week).
- VII. Entire program to be under the supervision of Mr. C. E. Stillinger.
- VIII. Active forces in use.
  1. Schools (Exhibit 7).
  2. List of county superintendents (Exhibit 8).
- IX. Send literature and letters to County Boards of Education.



Pullman, Washington,  
September 9, 1922.

Mr. John Jones,  
County Agent,  
Whitman County,  
Colfax, Washington.

Dear Mr. Jones:

During the week of September 11 to 16 the U. S. Department of Agriculture in cooperation with Washington State Department of Agriculture, the Washington State Agriculture College, the Extension Division, and the Washington State Department of Education will carry on through the public schools, the inspection of all currants, gooseberries and white pines for White Pine Blister Rust. Further an effort will be made to locate all black currants and planted white pine in the state.

The inclosed bulletin is self explanatory of the situation. The disease has been found in Washington, British Columbia and in the Puget Sound region of Washington. Due to the extent of the area to be covered, all agencies are being used to find the disease if it is present so that it may be located and eradicated before it has become established in our native forest.

During this week and afterward you will no doubt have many inquiries regarding the disease and there will be reports of the disease given to you. Please forward these reports to Dr. F. D. Heald, head of the Plant Pathology Department, Washington State College, Pullman, Washington.

I am inclosing for your information the details of instructions that have been sent to each teacher. Get in touch with the County Superintendent of your county as soon as possible, explain the purpose of the work to her and try to secure her cooperation in this matter. Anything you can do by personal conferences with school superintendents or teachers will aid greatly in the effectiveness of the general plan. Likewise any information that you can send regarding the location of black currant plantings or plantings of white pine or any specimens that look like the disease will be an aid that will be much appreciated.

Thanking you now for the cooperation I am sure you will give, I remain,

Very sincerely yours,

Head Extension Division



DEPARTMENT OF EDUCATION  
Olympia, Washington

September 9, 1922.

Miss Jennie Jones,  
County Supt. King County,  
Seattle, Washington.

Dear Miss Jones:

During the week of September 11 to 16 the United States Department of Agriculture in cooperation with the Washington State Department of Agriculture, the Washington State College, and the Washington State Department of Education will make a special effort through the use of the public school children to determine the extent of the distribution of white pine blister rust in Washington. I am inclosing for your information literature concerning the disease and the program of action of the teacher.

I shall appreciate it very much if you will take this matter up with each superintendent, principal and teach in your county and urge them to put into effect the program of inspection and make it as thorough and effective as possible.

Thanking you now for the full cooperation that I am sure you will give, I remain,

Very truly yours,

Superintendent of Public Instruction.

Cooperating with  
Bureau of Plant Industry,  
U. S. Department of Agriculture





DEPARTMENT OF EDUCATION  
Olympia, Washington

September 9, 1922.

Dear Teacher:

literature

I am inclosing which, I believe, is self explanatory. In cooperation with the United States Department of Agriculture and the Washington State Department of Agriculture and Washington State College, I, as superintendent of Public Instruction, have promised the aid of our public school children to locate this disease wherever it occurs in Washington. As you will learn from the inclosed literature it has been found in a few places in Washington. Because of the vast territory to be covered in a short time it is impossible for the state and federal agents to inspect it. Consequently we have an opportunity to be of real service.

The effectiveness and thoroughness of this search for the White Pine Blister Rust and the location of all black currants and planted white pine depends upon you as a teacher. Please read the inclosed circular to you pupils, show them the pictures and describe the disease to them. During the week of September 11 to 16 ask each pupil as he goes to and from school or about his home, to look for the disease on both cultivated and wild currants, gooseberries and white pine. Of course all are to be on the lookout for the disease after this week and report anything of possible importance regarding the matter. Have them bring in specimens to you that look like the disease. Likewise ask them to report to you all plantings of black currants or planted white pine which they may locate. If there is any doubt as to whether the currants are the black variety or the pines white pines please have the students bring in specimens which you can forward for identification. All specimens that are brought in should be placed in a folded paper or preferably an envelope. On the outside of this envelope place the student's name and the location of the plants and their owner. At the end of the week send in, the inclosed envelope as requested all specimens together with your report on the inclosed form to Dr. F. D. Heald, Head of the Department of Pathology, Washington State College, Pullman, Washington.

Through such a survey the disease may be located in a community before it has become widely distributed and consequently it can be eradicated before it reaches our native timber. Thus one of the most destructive disease in the United States will be prevented from becoming established in Washington and consequently thousands of dollars will be saved for the agricultural interests of the state.

Thanking you now for the cooperation I am sure you will give,  
I remain,

Very sincerely yours,

Supt. of Public Instruction.



REPORT BY TEACHER ON STUDENT INSPECTION FOR WHITE PINE BLISTER RUST.

This report is to be submitted at the end of the second week of your school. A report is to be made under any and all circumstances.

Town \_\_\_\_\_ County \_\_\_\_\_ School District No. \_\_\_\_\_ Name of School \_\_\_\_\_ Grade \_\_\_\_\_  
Teacher's name \_\_\_\_\_ Address \_\_\_\_\_ No. pupils participating \_\_\_\_\_ Date \_\_\_\_\_

SUMMARY OF STUDENTS' REPORTS

INSTRUCTIONS: As far as possible get the location from the students of all English black currents and planted white pine. Submit specimens of everything that looks like the disease. Include specimens in an envelope or paper bearing name of student, location of plants and name and address of owner.

Name of pupil	Name and address -- owner	Diseased Specimens		Plantings	
		No. :	No. :	Name and address -- owner	No. : No. :
:	:	Cur.:white:	:	:	blk.: white
:	:	Sp.:pines:	:	:	cur.: pines
:	:	:	:	:	:
:	:	:	:	:	:
:	:	:	:	:	:

Name of pupil	Diseased Specimens		Plantings	
	Name and address -- owner	No. : No. : : cur.:white: : & gb.:pines:	Name and address -- owner	No.: No. : : blk:white : cur:pines

HOW THE SCHOOL CHILDREN OF WASHINGTON CAN HELP  
TO GUARD WASHINGTON'S FORESTS AGAINST THE WHITE PINE BLISTER RUST.

Washington has \$24,600,000 worth of western white pine which must be guarded against the invasion of this destructive Blister Rust.

This disease has already appeared in southwestern British Columbia and the northern portion of the Puget Sound region of Washington.

It is known to occur only in a limited area in Washington but for the safety of our forests a careful search for the disease must be made in all parts of the state so that if it does occur in localities other than where it has been found it may be discovered and wiped out before it has become established beyond eradication.

The boys and girls can act as detectives to find the disease if it should be present. If the disease is found the Washington State Department of Agriculture and the National Government will then take steps to get rid of it immediately. Study the government folder and the pictures until you know all about the disease and what it looks like. Then go out and hunt for signs of the rust disease especially on black currants and send in all suspicious specimens for identification.





School Campaign in Washington

<u>County</u>	<u>Number Districts</u>	<u>Number Teachers</u>	<u>Number Students</u>	<u>H. S. Students</u>
Adams	91	141	2,703	244
Asotin	29	75	1,950	368
Benton	30	114	2,956	457
Chelan	53	206	5,293	852
Clallam	39	101	2,346	293
Clarke	72	253	7,431	875
Columbia	39	77	1,488	196
Cowlitz	58	129	3,085	354
Douglas	99	141	2,671	191
Ferry	31	51	1,219	104
Franklin	32	71	1,388	186
Garfield	35	50	995	142
Grant	79	121	2,104	387
Grays Harbor	51	298	8,970	1,202
Island	16	51	1,326	111
Jefferson	23	59	1,229	142
King	125	2,076	66,826	10,294
Kitsap	57	184	6,355	634
Kittitas	44	177	4,666	621
Klickitat	81	130	2,381	281
Lewis	73	331	9,678	1,252
Lincoln	130	231	4,166	523
Mason	30	55	1,085	119
Okanogan	69	196	4,630	426
Pacific	29	149	3,663	398
Pend Oreille	32	68	1,551	133
Pierce	100	859	28,221	4,384
San Juan	16	31	754	76
Skagit	72	280	8,288	1,160
Skamania	24	37	618	71
Snohomish	72	514	15,312	2,606
Spokane	154	1,006	30,425	5,513
Stevens	124	204	5,397	558
Thurston	55	175	5,344	731
Wahkiakum	22	34	742	28
Walla Walla	60	243	6,635	1,241
Whatcom	56	401	12,013	2,120
Whitman	176	410	8,449	1,423
Yakima	61	468	15,754	1,961
39	2,440	10,197	290,107	38,657



County Superintendents

(Term Commencing September 1, 1919)

<u>Counties</u>	<u>School Superintendent</u>	<u>County Seat</u>
Adams	Olive M. Hoffhine	Ritzville
Asotin	Mrs. Viola Likes	Asotin
Benton	Mrs. Iowa M. Crawford	Prosser
Chelan	J. Frank Casebeer	Wenatchee
Clallam	Ina M. McNutt	Port Angeles
Clarke	Chester F. Bennett	Vancouver
Columbia	W. W. Hendron	Dayton
Cowlitz	Joseph Gardner	Kalama
Douglas	Mrs. L. O. Anderson	Waterville
Ferry	Eva Hane	Republic
Franklin	Edith K. Peck	Pasco
Garfield	Frances J. Gimlin	Pomeroy
Grant	J. Elmer Bovey	Ephrata
Grays Harbor	Geneva A. Johnson	Montesano
Island	Frank D. Newberry	Coupeville
Jefferson	Mrs. Margaret Sturrock	Pt. Townsend
King	A. S. Burrows	Seattle, Wash.
Kitsap	Geo. T. Crockett	Port Orchard
Kittitas	Mrs. Mary A. Boedcher	Ellensburg
Klickitat	C. M. Ryman	Goldendale
Lewis	Z. May Meighen	Chehalis
Lincoln	W. S. Shelton	Davenport
Mason	Mrs. Mary M. Knight	Shelton
Okanogan	M. Brinkerhoff	Okanogan
Pacific	Edith Soper	South Bend
Pend Oreille	Mrs. Mamie P. Johnson	Newport
Pierce	Mrs. Minnie D. Bean	Tacoma
San Juan	F. W. Cobb	Friday Harbor
Skagit	Mable Graham	Mt. Vernon
Skamania	W. E. Miller	Stevenson
Snohomish	W. F. Martin	Everett
Spokane	F. V. Yeager	Spokane
Stevens	W. O. Cummings	Colville
Thurston	Mrs. Cassandra Brown	Olympia
Wahkiakum	May B. Watkins	Cathlamet
Walla Walla	Mary Gilliam	Walla Walla
Whatcom	Mrs. Jennie M. Robin	Bellingham
Whitman	S. F. Shinkle	Colfax
Yakima	Mrs. Anna R. Nichols	Yakima



Seattle, Washington, July 18, 1922.

Mrs. Josephine C. Preston,  
Supt. of Public Instruction,  
Olympia, Washington

Dear Mrs. Preston:

No doubt the discovery of the dreaded White Pine Blister Rust in British Columbia and the northern Puget Sound region has come to your attention.

The U. S. Department of Agriculture and the State Department of Agriculture of Washington are making every effort to stamp out the disease where it now occurs and to determine whether the disease occurs in any other parts of the state. Due to the vast territory to be covered I am at this time requesting permission to ask all of the school children to look for the disease during the second week of school this fall and to report their findings to us. It is felt that the children can be of real public service in this work.

I am enclosing a detail plan which it is proposed to carry out. If you will endorse this plan and recommend it to your superintendents I shall then feel free to take the matter up directly with the county superintendents.

Very truly yours,

Assistant Pathologist.

CRS/AW



Seattle, Washington, July 21, 1922.

Mr. Thomas E. Hulse,  
County School Supt., King County,  
Seattle, Washington.

Dear Mr. Hulse:

During the second week of school the United States Department of Agriculture in cooperation with the Washington State Department of Agriculture and the Washington State Department of Education will make a special effort through the use of the public school children to determine the extent of the distribution of white pine blister rust in Washington. I am inclosing for your information literature concerning the disease and the program of action asked of the teacher.

This program has received the indorsement of Mrs. Preston. For your information I am inclosing a copy of her indorsement of the program. I am inclosing a letter addressed to the teacher which will be signed by this office and the indorsement signed by you if the letter and program meets your approval. If you desire to make any changes or have any suggestions, please make them. After receiving your indorsement it is proposed to mimeograph the letter, inclose it with the program, and mail it direct to the teacher.

About September 1, we expect to ask you to supply us with as complete a list as possible of the teachers in your county as well as the date of the opening of each school.

Hoping that you can see fit to indorse this program and return to me the letter "To the Teacher" with your indorsement so that the supplies may be prepared, I am,

Very truly yours,

Assistant Pathologist

CRS/AW





429 Lyon Building, Seattle, Washington,  
September 1, 1922.

To the Teachers of King County:

An insidious pine-killing disease threatens to spread from the Puget Sound Country to the commercial white and sugar pines that are worth more than a billion dollars to the people of Washington, Idaho, Oregon and California.

In order to save the pines it is necessary to know (1) the location of every diseased pine, gooseberry, and currant bush in the state; (2) the location of planted white pines, because the disease may have been imported on these; and (3) the location of cultivated black currants, often called English currants, because these are the worst spreaders of the disease.

The U. S. Department of Agriculture and the State Department of Agriculture are cooperating in this work. The State is so vast that this essential information cannot be obtained without the assistance of the school children.

Please read the enclosed leaflet to your pupils and show them the pictures. Place the poster where the students may have it constantly for reference. Ask each pupil as he goes to and from school and about his home during the week of September 18th to 23rd to look for the disease on all currants, gooseberries and white (5-neededled) pines.

Ask them to bring to you specimens that look like the disease, also to report to you the location and approximate number of planted black currants and planted white pines they find.

Then if you will send these specimens and the report blank in the enclosed addressed envelope you will have assisted materially in our effort to save our commercial stands of white and sugar pines. If no specimens are enclosed the envelope can be mailed without postage. If specimens are enclosed postage is required. You will be reimbursed for postage if you so desire.

Thanking you sincerely for your cooperation, I am,

Yours truly,

Assistant Pathologist.

I heartily endorse this plan in assisting to save the pines of the West, and incidentally of creating in the children a greater interest in plant life.

Superintendent of Schools,  
King County.



HOW THE SCHOOL CHILDREN OF WASHINGTON CAN HELP  
TO GUARD WASHINGTON'S FORESTS AGAINST THE WHITE PINE BLISTER RUST

Washington has \$24,600,000 worth of western white pine which must be guarded against the invasion of this destructive Blister Rust.

This disease has already appeared in southwestern British Columbia and the northern portion of the Puget Sound region of Washington.

It is known to occur in a limited area in Washington but for the safety of our forests a careful search for the disease must be made in all parts of the state so that if it does occur in localities other than where it has been found it may be discovered and wiped out before it has become established beyond eradication.

The boys and girls can act as detectives to find the disease if it should be present. If the disease is found the Washington State Department of Agriculture and the National Government will then take steps to get rid of it immediately. Study the government folder and the pictures until you know all about the disease and what it looks like. Then go out and hunt for signs of the rust disease especially on black currants and send in all suspicious specimens for identification.



### 3. Scouting and Eradication in Oregon

Federal Blister Rust Work in Oregon during this season of 1922 has been carried on in accordance with the following memorandum.

MEMORANDUM OF UNDERSTANDING BETWEEN THE OREGON STATE BOARD OF HORTICULTURE AND THE BUREAU OF PLANT INDUSTRY, UNITED STATES DEPARTMENT OF AGRICULTURE RELATIVE TO COOPERATIVE WORK ON THE CONTROL OF WHITE PINE BLISTER RUST IN OREGON.

Effective May 15, 1922 to March 31, 1923.

The object of this memorandum of understanding shall be to facilitate the prompt location and eradication or effective control of white pine blister rust in Oregon in view of the threatened destruction of private, state, and nationally owned timber throughout the West as a result of the presence of this disease in British Columbia and Washington, and the danger of its further spread of natural dissemination or quarantine violations.

It is agreed that the Oregon State Board of Horticulture and the Bureau of Plant Industry shall cooperate to the above ends in accordance with the following plans:

1. The Bureau of Plant Industry shall pay the salaries and expenses of one or more men who shall perform necessary scouting for the disease in Oregon. The Oregon State Board of Horticulture shall deputize these scouts to enable them to enter and inspect any property but not to destroy plants.

2. In view of the fact that the Oregon State Board of Horticulture has no special appropriation for blister rust control, it is understood that when this disease appears in Oregon, the Oregon State Board of Horticulture agrees immediately to make every effort to secure funds for its eradication from sources available to it, and in the event of failure to secure necessary funds for this purpose, the Oregon State Board of Horticulture shall deputize the employees of the Bureau of Plant Industry working in Oregon, empowering them to destroy blister rust host plants infected or potentially infected with this disease.

3. The Oregon State Board of Horticulture and the Bureau of Plant Industry shall cooperate in the strict enforcement of State and Federal blister rust quarantines now in effect or which may be promulgated. The Bureau of Plant Industry shall pay the salaries and expenses and direct the work of one or more men who shall during the proper season inspect for violations of the Federal blister rust quarantines in the State of Oregon. These men shall also cooperate with the Oregon State Board of Horticulture in enforcing State quarantines. For this purpose they shall receive instructions in methods of procedure from the Oregon State Board of Horticulture and shall be deputized to destroy plants shipped in violation of State quarantines.

4. The Oregon State Board of Horticulture and its cooperators shall use their regular employees, so far as their other duties permit, in systematically locating cultivated black currants in infected or potentially





infected blister rust host plants; in scouting for the blister rust; in inspecting nurseries for this disease and in enforcing State and Federal blister rust quarantines. Such work will aggregate approximately 5000 man days, representing a total expenditure on the part of the Oregon State Board of Horticulture and its cooperators of about \$17,500 for the control of this disease. The expenditures of the Bureau of Plant Industry indicated in previous paragraphs will aggregate approximately \$8,035, but none of the Federal funds shall be spent in compensation for plants destroyed in control work.

5. All official records showing work performed under this agreement shall be open to inspection of the Oregon State Board of Horticulture or the Bureau of Plant Industry on request. All findings of the blister rust made by either the Oregon State Board of Horticulture and its cooperators or the Bureau of Plant Industry shall be promptly reported to the other party. All specimens collected or received by the Oregon State Board of Horticulture and its cooperators which are suspected to be infected with blister rust shall be submitted to the Bureau of Plant Industry for critical determination. The Bureau of Plant Industry shall give such technical information to the employees of the Oregon State Board of Horticulture and its cooperators as will enable them to recognize the several stages of the disease.

6. It is understood that the Bureau of Plant Industry shall be primarily responsible for scouting and location of the blister rust in Oregon and for technical information on its control, but that the Federal government has no authority to destroy private or state property and therefore the Oregon State Board of Horticulture shall be wholly responsible for the destruction of such pine, currant and gooseberry plants as may be found necessary in order to control the spread of this disease in Oregon, including plants shipped in violation of State and Federal blister rust quarantine regulations.

7. This memorandum of understanding shall take effect May 15, 1922 and continue in force until March 31, 1923, or until previously terminated by mutual consent of the parties concerned.

SIGNATURES:

Date May 12, 1922

Chas. A. Park  
President, Oregon State Board  
of Horticulture.

Date June 22, 1922

K. F. Kellerman  
Chief, Bureau of Plant Industry  
United States Department of  
Agriculture.



OREGON REPORT  
By L. N. Goodding

I am submitting herewith a report of the Oregon Blister Rust work. My plan has been to make it as brief and to the point as possible. For this reason I have tabulated as much of the information as seemed to lend itself to such disposition.

The enclosed maps, Nos. 1 and 2, show quite clearly the country which has been covered by our scouts and by Professor Lawrence. Map No. 3 shows the distribution of our three species of white pine. This map is comparatively accurate. Maps Nos. 4 and 5 are suggestive only.

Professor Lawrence made no attempt to examine Ribes or pines for blister rust. His studies were ecological and gave us much information regarding distribution and possible barriers. The specific locations of pines on the map are largely from his collections and from data he obtained from the Forest Service stations visited on his trip.

Due to lack of information no attempt has been made to discuss density of either pines or Ribes. It may be said, however, that Ribes are abundant in nearly all parts of the state. Where drought eliminates most of the species Ribes cereum, R. viscosissimum or R. aureum are likely to be found.

A glance at maps Nos. 1 and 2 will show where the intensive work has been done. The black currant location work in the northern tier of counties including Washington and Clackamas is complete or nearly so. Some work must be done in the outlying districts where there are isolated farms and ranches, many of which are inaccessible by auto and some even by wagon. Mr. Eddy and I located four plantings in Columbia county, in sections of this nature, late in the season after the location work had been completed.

Clatsop county was the only place where any attempt was made to eradicate the black currants. Here 82.5 per cent were eradicated. Every location of black currants that was made, however, will need to be visited again the coming season as many of the bushes which were removed have sprouted up from the roots. This is a matter of personal observation. I think that the boys who did the work did not realize how persistently these bushes hold on to life. It certainly was not a matter of carelessness.

Although there has been much good work done in Oregon there is much that remains to be done, besides that above indicated. Now that the state has legislation declaring the black currants a nuisance, a real campaign of eradication can be begun. Professor Lawrence has given us valuable information regarding the distribution of pines and Ribes in the eastern part of the state. Much work of a similar nature but more intensive needs to be done in the western part of the state. Much of this can be done in connection with the general scouting work but it will need an organized plan for its proper accomplishment. I feel that Professor Lawrence could render us valuable assistance in this line.



See Map of Tillamook Co. Oreg. attached  
to Gooddings letter Dec. 1, 1924

Filed - W.W.Pine-Distribution- Oreg. Goodding 1924

*See Map, No 3.*



COPY of part of letter.

UNITED STATES DEPARTMENT OF AGRICULTURE

Bureau of Plant Industry

Botany Dept., O.A.C., Corvallis, Ore.

Dec. 1, 1924.

Mr. S. B. Detwiler,  
Spokane, Wash.

Dear Mr. Detwiler:

I took a trip to the white pine area in Tillamook County of which I was telling you. The accompanying map will show the exact location. Gales Creek is ten miles northwest of Forest Grove.

The only Ribes we were able to locate was R. Bracteosum and it is not so abundant as it often occurs. We did not scout west of the Rear ranch but a short distance. R. bracteosum doubtless occurs along the Wilson River in many places. There seems to be no Ribes in much of this white pine area. All the leaves have fallen and it is possible some were overlooked.

The forest here is for the most part an over-mature Douglas Fir, Hemlock, White Fir type with a few cedars. The white pines are confined to the low land along the streams. Here it varies from scattering trees to fifty percent of the stand. Where ever openings occur for the sunlight the young pines are coming in. The trees vary from very small seedlings to trees two feet or more in diameter. The large trees are scarce. All of the trees above eight inches in diameter seem to be good sound trees. Some of the smaller ones are suffering from some trouble, but this does not seem to be serious, I shall send material to Dr. Boyce for his determination.

The road leading to this section is passable for a car in the summer but is a bad road. It is impassable at this season. (L. J. Good)





Map No. 3 gives the location of two isolated groups of white pine in the western part of the state. One of these was discovered by our scouts while information regarding the other was obtained by Mr. Barton from the State Forestry Department. Our scouts also discovered native white pines in Multnomah, Clackamas and Hood River counties well beyond the line of distribution established by Sudworth. These findings indicate that our knowledge of white pine occurrence is limited, and it will not be surprising to learn that there are scattering white pines in many localities along the coast and adjacent tiers of counties.

To our certain knowledge *Ribes bracteosum* occurs in Hood River, Multnomah, Columbia, Clatsop, and Coos counties. Our knowledge, however, of its real distribution and abundance is very limited. Today we know more of the *Ribes* in eastern Oregon than we do of those in western Oregon. The coming season must give us more accurate knowledge of these things.

Some intensive scouting work by auto, pack horse, boat and on foot should be done during the coming season.

There seems to be some difference of opinion regarding the section of the state in which black currant eradication should begin. I think that I am not wrong in stating that it is Dr. Boyce's belief that the Sugar Pine area should be made the immediate battle ground while Professor Barss thinks that eradication should begin in the northern tier of counties adjacent to Washington infection. It seems to me that we should not fail to appreciate the value of the Western White Pine in Oregon and even if we should consider it of little commercial value its position between the known infection and the valuable Sugar Pine forests should not be overlooked. If Dr. Pennington's ideas of the long range aecial spread be correct a general infection in western Oregon would spell the doom of the Sugar Pines or the inauguration of *Ribes* eradication at a much earlier date than would otherwise be necessary. The removal of the black currants in northern Oregon may postpone an evil day indefinitely. The work of eradication should be carried southward as rapidly as possible.

Experimental eradication of the native *Ribes* should be undertaken this season in some suitable area of Western White Pine. I have in mind the Polk county area but wish to submit a further report on this subject after weather permits me to visit the section. In order to distribute the work it would probably be best to have the experimental Sugar Pine plot in California. Oregon has many suitable areas for work of this kind, however.

The value of the school campaign of the last season is hard to estimate. Judging from tangible results it was nearly worthless but much good may have been accomplished in distributing information and in arousing public sentiment. The black currant records are not reliable as there was abundant evidence that wild currants were reported as black and that no distinction was made between black and red in many cases. Again the addresses given were in most cases worthless. Apparently the entire campaign in Oregon was too extensive and in no locality sufficiently intensive. I feel that we should have a school campaign this spring combined with a campaign with the scout organizations, Boy Scouts, etc. meant in this case, but I think it should be confined to the immediate section in which eradication is to take place and should be for the purpose of creating sentiment



and locating black currants. The first is very important. It is to be regretted that there are no teachers' institutes in the spring as they offer an excellent opportunity for getting in touch with many teachers at one time and opening a way for further work. A poor speaker who knows what he is talking about has a much greater value than many well written letters, especially if these letters are of the circular type. I feel strongly that the Blister Rust worker should get into personal touch with the teacher in some manner. High schools and the upper grades could be visited to advantage and scout organizations could be swung into line by short talks, but work of this kind cannot be done over the entire state of Oregon. This is not even desirable.

Since working in Oregon I have felt keenly a lack of coordination in some of the branches of the work which has resulted in much valuable information being unavailable or in a needless duplication of the work. I do not feel that this is anyones fault. Workable systems are not evolved suddenly. There is, however, a definite problem here for solution. Here are some cases resulting from a lack of coordination: I wished to obtain information regarding the distribution of white pines in western Oregon and wrote to the State Forester about the matter only to learn that one of our own men, Mr. Barton to be specific, had already gleaned all the information from his office and his wardens that was available. To date I haven't the information. I thought of going to the U. S. Forest Service to get data along this same line and discussed the matter with Dr. Boyce only to learn that the matter was already cut and dried to get this information during the educational campaign with the Forest Service the coming season. I should appreciate some of the information before next fall or before this time next year at any rate. I am much interested in some of Mr. Wyckoff's plans for coordinating the work.

The cooperation of our office with the Oregon State Board of Horticulture and the Agricultural College has been most gratifying. Friction which seems to exist in some other states is, apparently, absent here.

The nursery inspection work can well be done by the regular scouting force and some expense eliminated.

The quarantine against Washington and the East should be rigidly maintained. There may be a possible tendency to give much attention to Washington and leave the bars down for the entrance of the rust from the East.

#### Summary of Recommendations:

1. A spring educational campaign to precede eradication work.
2. Eradication of black currants in the northern tier of counties.
3. Studies in distribution in cooperation with Prof. Lawrence.
4. Location work to be continued in the western counties.



5. Experimental eradication work of native Ribes possibly in Polk county.
6. Maintenance of the present system of cooperation with the state.
7. A better system of coordinating the different phases of the work to enable the state leader and others to have all the information available.

Respectfully submitted,

Leslie N. Goodding.





RECORD OF BLISTER RUST WORK IN OREGON FOR 1922 AND JANUARY OF 1923

COUNTY			Black		White Pines			
			Currants		Examined			
			Examined				No. of	
	Man	Miles	Plant-	Plant-	Plant-	Plant-	Inspec-	
	Days	Scouted	-ings	Plants	-ings	Plants	-tions	
Benton	275 <sup>1</sup> / <sub>2</sub>	136	9	51	1	3	1	
Clackamas	127	1,872	129	2,675	82	Many	2	
Clatsop	128	641	226	1,301	2	5	3	
Columbia	46 <sup>1</sup> / <sub>2</sub>	708	37	131			3	
Coos	27	288	30	225	1	1	2	
Curry	3	0	3	8			1	
Douglas	23	510	6	19			2	
Hood River	35	606	15	47	6	8	3	
Jackson	22	164	8	22	1	1	2	
Josephine	7 <sup>1</sup> / <sub>2</sub>	56	1	2			1	
Klamath	6	113	4	18			1	
Lane	32	636	18	78	8	10	2	
Lincoln	20		8	34			1	
Linn	18 <sup>1</sup> / <sub>2</sub>	559	12	38	5	5	2	
Marion	36	353	28	1,892	25	Many	2	
Multnomah	177	1,882	433	2,795	77	122	3	
Polk	18 <sup>1</sup> / <sub>2</sub>	88	4	6			1	
Tillamook	12 <sup>1</sup> / <sub>2</sub>	279	13	166			1	
Wasco	2 <sup>1</sup> / <sub>2</sub>	97	2	2			1	
Washington	99	985	97	12,953	10	79	2	
Yamhill	20	209	26	75	1	1	2	
TOTALS	1,136 <sup>1</sup> / <sub>2</sub>	10,182	1,041	22,538	219	349		

:1,208<sup>1</sup>/<sub>2</sub>:12,422.3: Last two figures include the Lawrence Project.

Besides the above, Professor W. E. Lawrence made an extensive study chiefly in the eastern part of the state, covering by car 2240.3 miles in the following counties: Baker, Benton, Clackamas, Crook, Deschutes, Douglas, Gilliam, Grant, Harney, Jackson, Jefferson, Josephine, Hood River, Klamath, Lake, Lane, Linn, Malheur, Marion, Morrow, Multnomah, Sherman, Umatilla, Union, Wallowa, Wasco, and Wheeler, and devoting 72 days to the project.

There are no figures at hand regarding the work of Mr. S. A. Barton.

Miles travelled or scouted refers to auto and auto stage. No effort was made to estimate miles covered on foot, by wheel or on horseback.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that proper record-keeping is essential for the transparency and accountability of the organization. This section also outlines the various methods used to collect and analyze data, ensuring that the information is reliable and up-to-date.

2. The second part of the document focuses on the financial aspects of the organization. It provides a detailed breakdown of the budget, including income and expenses, and discusses the strategies used to manage the funds effectively. This section also includes a comparison of the current financial state with previous years, highlighting any significant changes or trends.

3. The third part of the document addresses the operational aspects of the organization. It describes the various departments and their functions, as well as the processes used to coordinate and execute the organization's activities. This section also discusses the challenges faced by the organization and the steps taken to address them.

4. The fourth part of the document discusses the future plans and goals of the organization. It outlines the strategic vision and the specific objectives that the organization aims to achieve in the coming years. This section also includes a discussion of the resources needed to implement these plans and the steps taken to secure them.

5. The fifth part of the document provides a summary of the key findings and conclusions of the report. It highlights the main points discussed in the previous sections and provides a final assessment of the organization's overall performance. This section also includes recommendations for future actions and a statement of the organization's commitment to continuous improvement.

6. The sixth part of the document discusses the impact of the organization's activities on the community and the environment. It provides a detailed analysis of the social and environmental consequences of the organization's operations and discusses the steps taken to minimize any negative impacts. This section also includes a discussion of the organization's commitment to social responsibility and the steps taken to promote sustainable development.

7. The seventh part of the document discusses the organization's relationship with its stakeholders. It describes the various groups that have an interest in the organization's activities and the steps taken to engage them in the organization's decision-making process. This section also includes a discussion of the organization's commitment to transparency and the steps taken to ensure that all stakeholders have access to the information they need.

8. The eighth part of the document provides a final summary and conclusion. It reiterates the main points of the report and provides a final assessment of the organization's overall performance. This section also includes a statement of the organization's commitment to continuous improvement and a final statement of the organization's vision for the future.

# RECORD OF BLACK CURRANT ERADICATION IN CLATSOP AND COLUMBIA COUNTIES.

	:Original:	Partially :	:	:	No. Plants:	Plants
County	:Holdings:	Erased:	Erased:	Remaining:	Originally:	Remaining
Clatsop :	226 :	4 :	189 :	37 :	1,301 :	226
Columbia:	37 :	0 :	1 :	36 :	131 :	118

## PERSONNEL OF THE OREGON WORK FOR 1922 AND JANUARY OF 1923.

Name	: Office	: From	: To	: Days:	Nature of Work
H. P. Barss	: Collaborator:	:	:	:	: General oversight of : state work
C. C. Epling	: Head Scout	: 6/12/22:	: 9/13/22 :	: 87 :	: In charge of scouts
Mrs. Joseph Clemens:	Clerk	: 7/1/22 :	: 10/1/22 :	: 92 :	: Clerical and Supervisory
G. A. Root	: Junior Path-	: 10/5/22:	: 10/19/22:	: 15 :	: Scouting and census
	: ologist	:	:	:	:
G. A. Root	: Jr. Pathg't:	: 1/25/23:	: 1/31/23 :	: 7 :	: Office work
S. A. Barton	: ---	: --- :	: --- :	: -- :	: ----
W. E. Lawrence	: Ecologist	: 6/21/22:	: 9/15/22 :	: 72 :	: Ecological survey of : eastern Oregon
L. N. Goodding	: Junior Path-	: 9/20/22:	: 1/31/23 :	: 126 :	: In charge of state work
	: ologist	:	:	:	: under supervision of
	:	:	:	:	: Prof. H. P. Barss
W. de Macedo	: Scout	: 6/16/22:	: 9/1/22 :	: 74 :	: Scouting
G. H. Duncan	: "	: 6/16/22:	: 7/22/22 :	: 33 :	: "
T. P. Dykstra	: "	: 6/16/22:	: 12/15/22:	: 180 :	: "
R. H. Eddy	: "	: 9/20/22:	: 12/15/22:	: 86 :	: "
D. H. Ferguson	: "	: 6/16/22:	: 12/15/22:	: 180 :	: "
H. E. Gaines	: "	: 6/16/22:	: 9/1/22 :	: 72 :	: "
J. R. Parker	: "	: 6/16/22:	: 7/22/22 :	: 33 :	: "
J. B. Shorett	: "	: 6/12/22:	: 9/1/22 :	: 78 :	: "
R. F. Wilbur	: "	: 6/16/22:	: 9/1/22 :	: 74 :	: "
TOTAL	:	:	:	: 1209:	

Notice that the total number of days does not include work done by Professor H. P. Barss nor that done by Mr. Barton. I had no available data regarding the work of the latter.



# SUMMARY OF SCHOOL CAMPAIGN.

COUNTY	Letters :					Number of Pupils, 228156 Number of Teachers, 6606
	Form :	Containing :	Black :	White :		
	Letters :	Specimens :	Currant :	Pine :		
	Rec'd.	Various	Records	Records		
Baker	47	12	0	0		Specimens contained:
Benton	50	7	4	0		
Clackamas	243	21	22	1		Rusts on Ribes-----0
Clatsop	67	14	17	1		Pseudopeziza on Ribes-----13
Columbia	40	7	17	0		Septoria on Ribes-----11
Coos	83	5	9	0		Phyllactinia on Ribes-----3
Curry	18	1	1	0		Monilia on Ribes-----1
Crook	23	0	0	0		Undertermined on Ribes-----1
Deschutes	32	4	8	0		
Douglas	94	11	1	0		
Gilliam	30	1	0	0		
Grant	23	2	0	0		
Harney	22	3	0	0		
Jackson	63	5	3	0		
Hood River	30	0	9	0		
Jefferson	19	0	0	0		Rust of Plants other than Ribes or Pines.
Josephine	44	4	2	0		
Klamath	47	12	0	0		
Lake	26	4	0	0		On Hollyhock and Mallow-----4
Lane	106	6	3	0		On Willows and Cottonwoods-----8
Lincoln	32	3	0	0		On Snapdragon-----1
Linn	106	10	4	0		On Poison Ivy-----1
Malheur	36	3	0	0		
Marion	143	18	0	0		
Morrow	38	3	0	0		
Multnomah	226	65	10	0		
Polk	48	3	2	0		
Sherman	20	2	0	0		
Tillamook	27	4	0	0		
Umatilla	73	5	0	0		All other Specimens were Insect Work.
Union	37	5	0	0		
Wallowa	40	5	0	0		
Washington	87	17	0	0		
Wasco	48	0	0	0		
Wheeler	18	1	0	0		
Yamhill	60	10	4	0		
TOTALS	2,196	273	116	2		









Route travelled by Blister-Root Scouts.  
Route travelled by Prof. Lawrence.

- ★ City
- PORTLAND
- Astoria
- City of large town
- Town or village
- Station or depot
- Ferrying point







Regions *scattered* rather *thoroughly*.

Regions where about 50% of the Black Currents were eradicated in 1922

Regions *scattered* but not *intensive*.

PORTLAND

McMinn

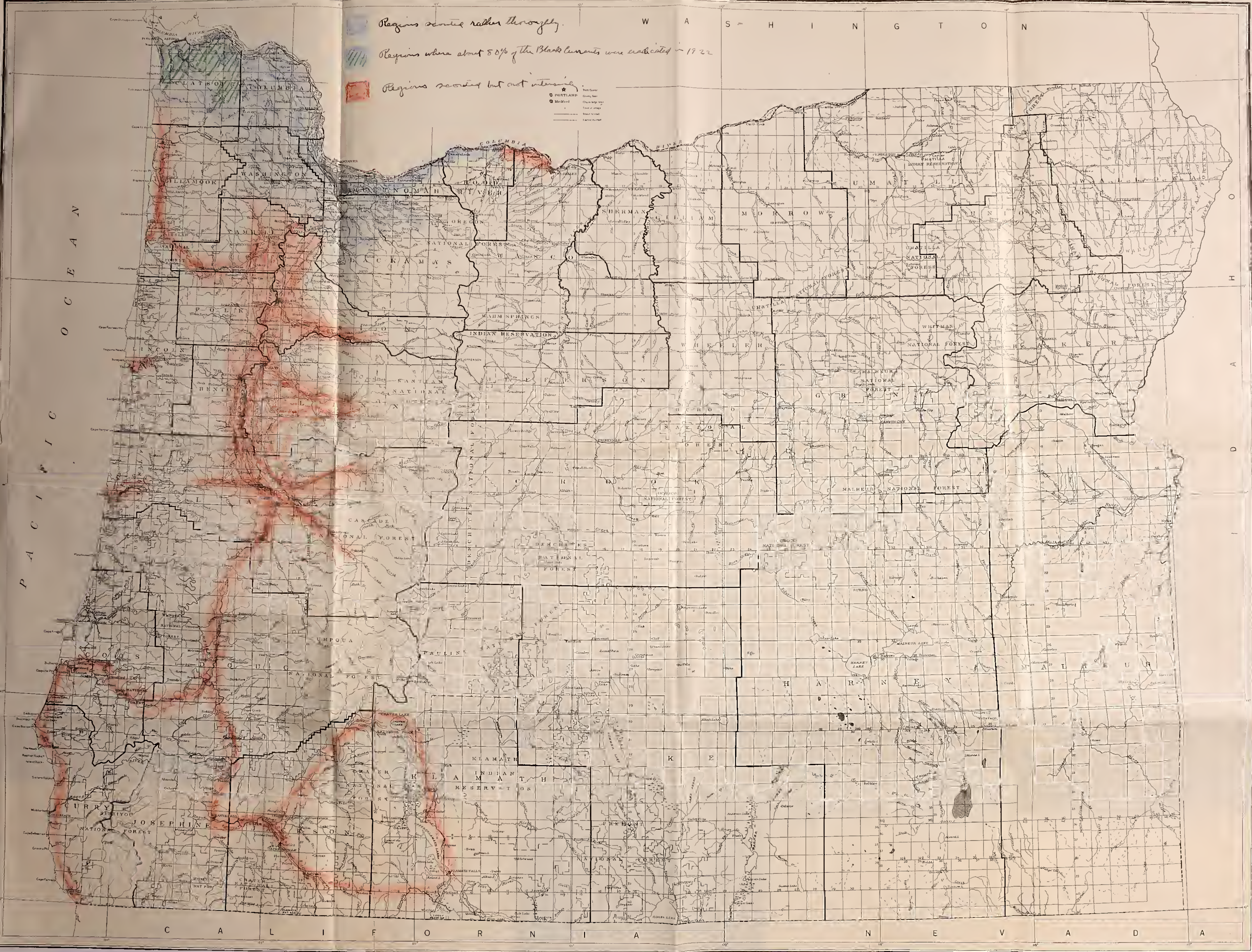
County Seat

County Boundary

Time of Survey

Water Course

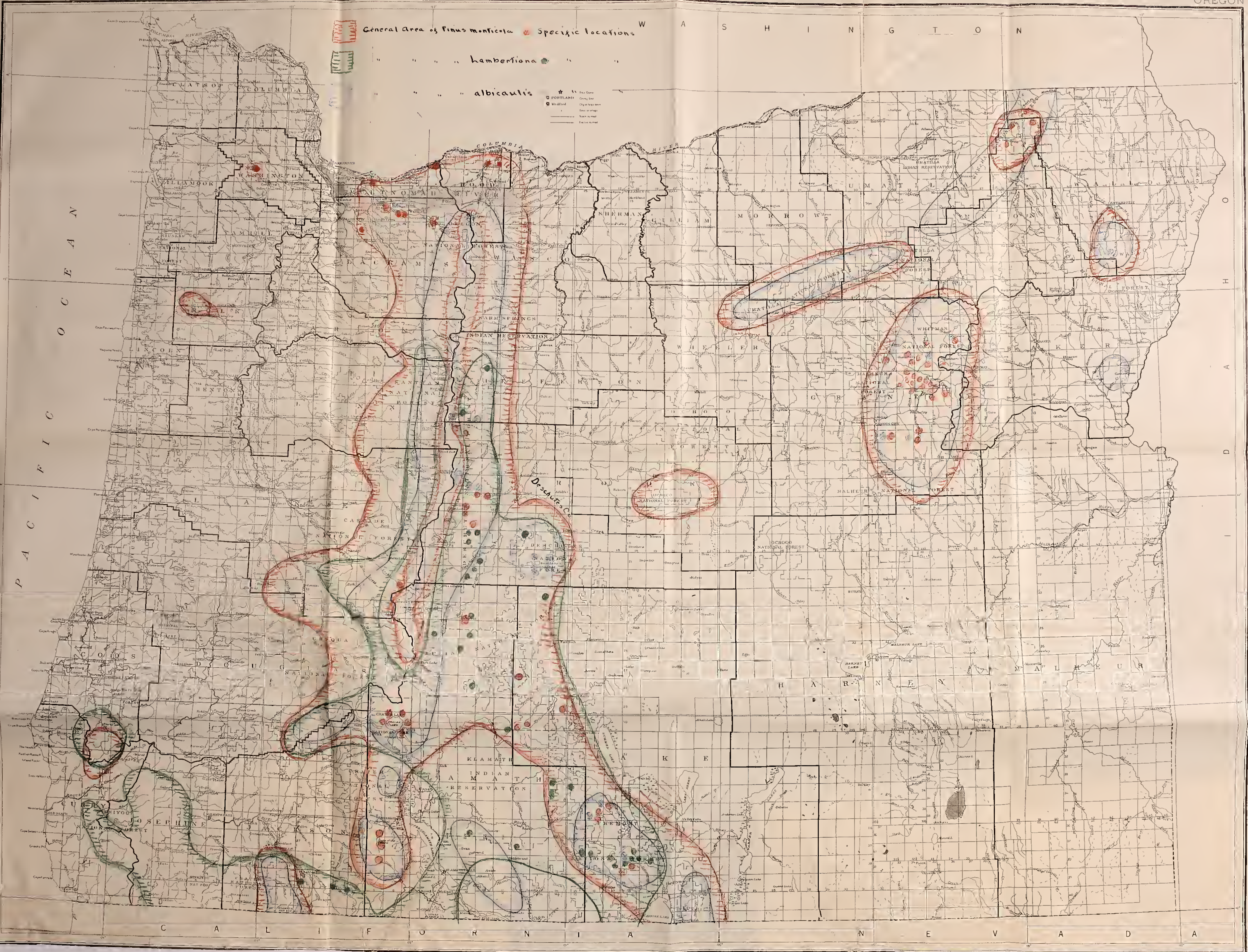
Section Number















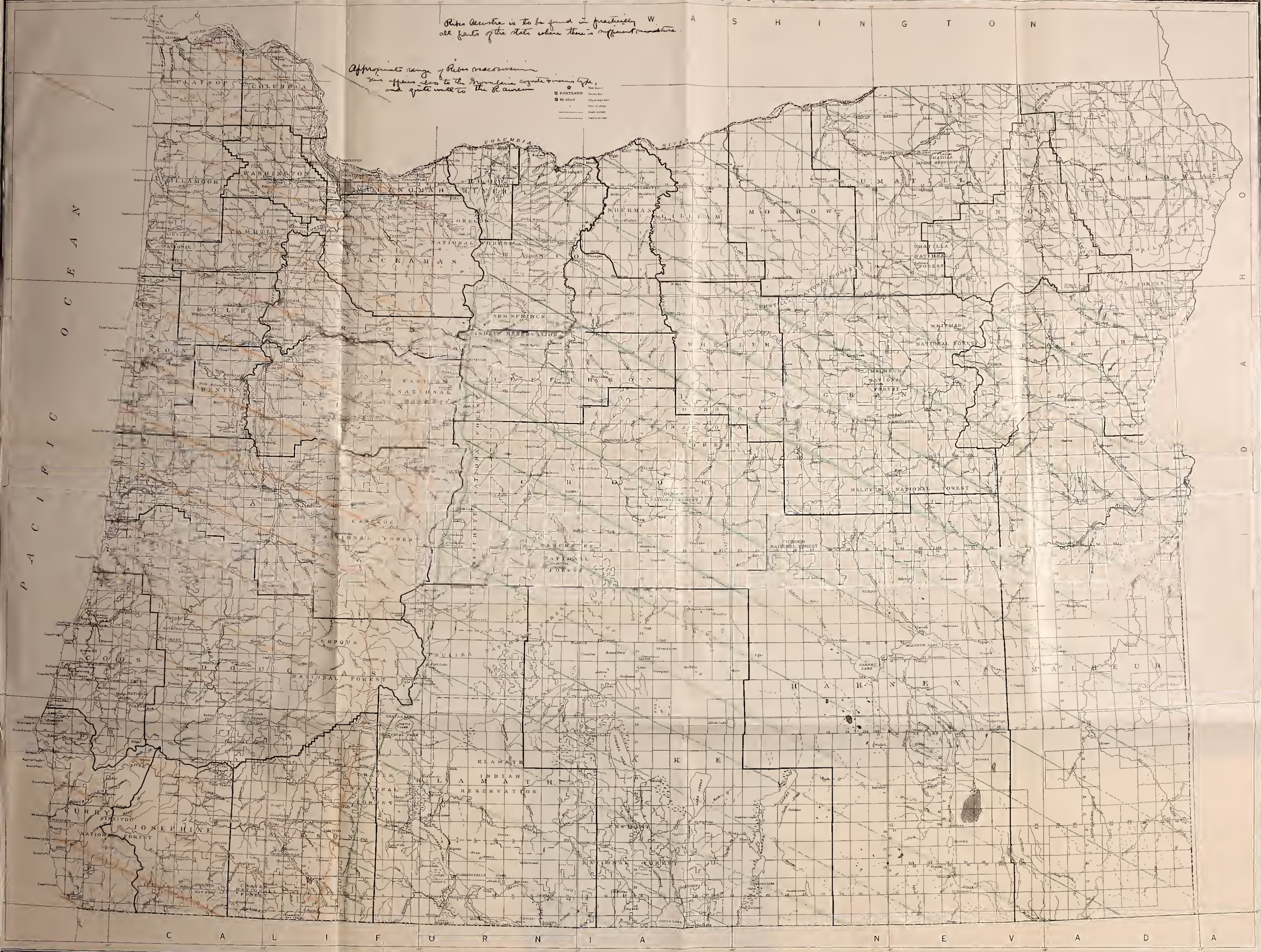


*Picea lucida* is to be found in practically all parts of the State where there is sufficient moisture.

Approximate range of *Picea canadensis*

It occurs also to the *hypoleuca* *coquimbensis* type, and quite well to the *P. aurea*.

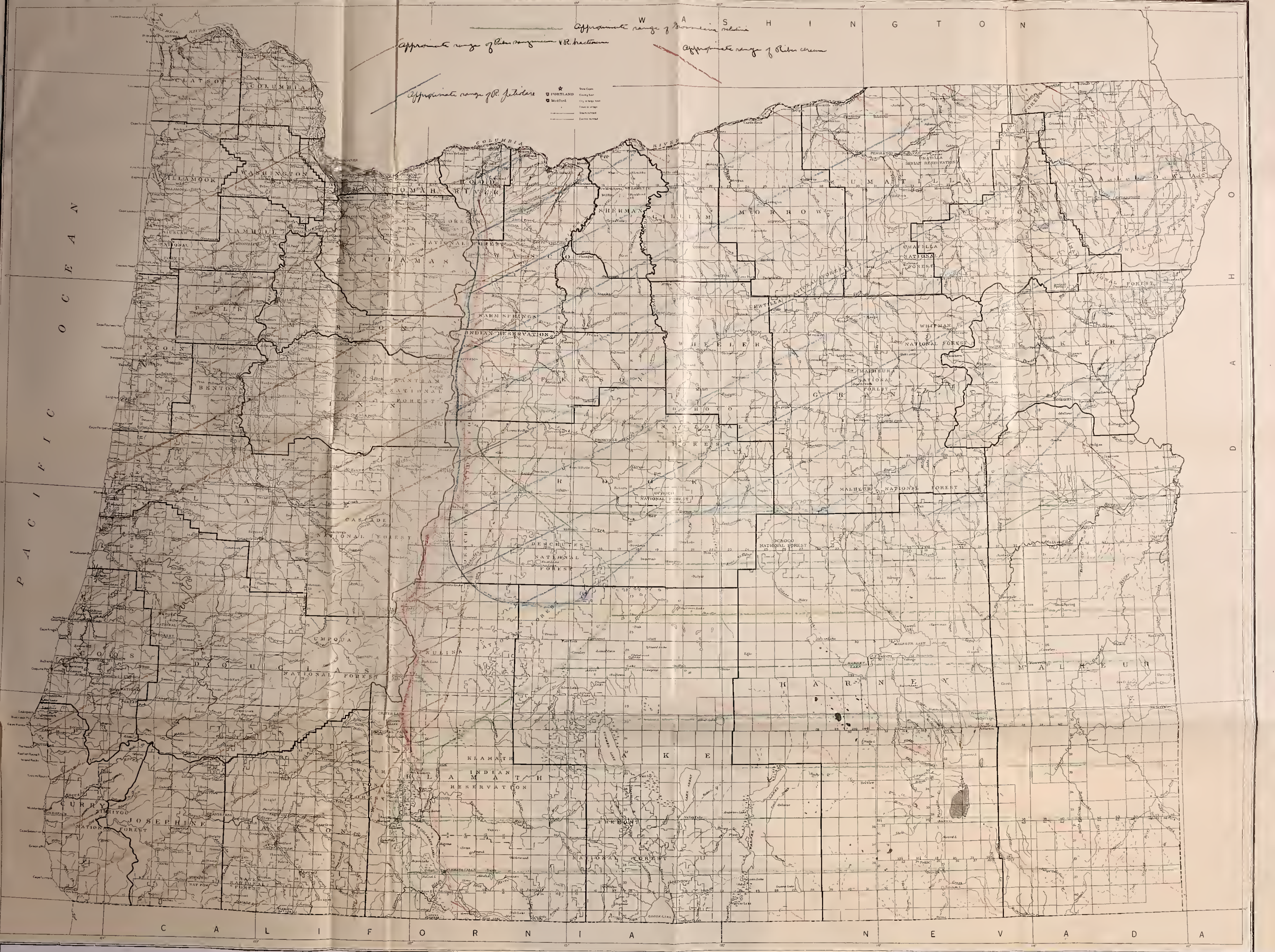
- ★ PORTLAND
- M. district
- City or large town
- Line to stage
- Road
- Railroad















BLISTER RUST COOPERATION WITH OREGON STATE FOREST SERVICE

The State Forester, F. A. Elliott, under the supervision of the State Board of Forestry, (Exhibit 1) executes all matters pertaining to forestry within the jurisdiction of the state. As yet, Oregon has no state forests, and protection work is, therefore, exercised on all privately owned timberlands coming under the provisions of the compulsory patrol law. The principal function of this department is to detect and suppress forest fires. 11,500,000 acres of forest-type lands, 9,000,000 of which are timbered, fall under the supervision of the State Department of Forestry. These 9,000,000 acres of timber constitute the holdings of private timber owners and revested O. & C. lands.

The timbermen, under the provisions of the compulsory patrol law, provide all funds for patrol fire fighting and improvement work. The state provides the supervising force. During the present season, the supervising force of the State Forestry Department has consisted of the State Forester, F. A. Elliott, a deputy state forester, one inspector and twenty-two fire wardens, (Exhibit 2.) Private interests have supported 354 patrolmen and lookouts (Table I.) The names of 225 of these individuals have been received by the Office of Blister Rust Control.

In accordance with the recommendations of the Portland Blister Rust Meeting at a conference between Mr. Stillinger and the State Forester, the following scheme of cooperation was agreed upon.

June 5, 1922.

MEMORANDUM OF AGREEMENT between the State Forester of Oregon, Mr. F. A. Elliott, and Mr. C. R. Stillinger of the Bureau of Plant Industry regarding blister rust cooperation.

1. Mr. Elliott will immediately prepare a sample form letter for all State District Wardens on blister rust cooperation and send copy of same together with a mailing list to the blister rust headquarters at Seattle.
2. These letters will be mimeographed and mailed by the Seattle office together with certain printed and colored posters to be furnished by the Bureau.
3. About July first, or as soon as all patrolmen and lookouts are on duty, Mr. Elliott will prepare another letter and mailing list of all such wardens numbering about 225, and send it to the Bureau for mimeographing and mailing.
4. All expense for mimeographing, mailing tubes, pamphlets, labor and material necessary for the mailing of such instructions to the state patrolmen and wardens will be borne by the Bureau of Plant Industry.





5. Necessary postage for sending letters and pamphlets to District Wardens and patrolmen will be paid by the State.

6. The plan of cooperation as worked out by the State Forester and Mr. Stillinger briefly provides that early in the season a representative of the Government will visit each of the District Wardens for the purpose of acquainting them with the blister rust situation and then after the close of the fire season, or about October, such representative will again visit the District Wardens and collect and tabulate data accumulated by them as the result of their summer's investigations and discoveries.

Note: Mr. Stanley Barton or other representatives of the Bureau are at perfect liberty to use the State Forester's Office as headquarters whenever desired and the State Forester's records will be available for use in blister rust control operations.

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In Compliance with articles 1 and 2 of this agreement, on June 25, Mr. Elliott's letter (Exhibit 4) together with one poster, one Bulletin, No. 742 and five report forms (Exhibit 5) with instructions regarding the use of the forms (Exhibit 6) were mailed from the Office of Blister Rust Control at Seattle, Washington to all of the twenty-two District fire wardens (Exhibit 2.) Furthermore, at the same time, mounts of the summer stage of White Pine Blister Rust was sent to all of these fire wardens.

In accordance with article 3 of this agreement, on July 17, a copy of Mr. Elliott's letter (Exhibit 7) addressed, "To all Patrolmen and Lookouts", together with a poster, a letter from this office (Exhibit 8) and five report blanks (Exhibit 5) with instructions (Exhibit 6) was sent to two hundred and twelve lookouts and patrolmen (Exhibit 3) whose names and addresses had been sent in to this office by the State Forester. On September 1, copies of Bulletin No. 226 were sent to all members of the Oregon Forestry Association listed in Exhibits 2 and 3.

As for articles 4 and 5, the distribution of all of the material during the season has been under government funds. Consequently, it has not been necessary for the state to expend any monies under this agreement.

Table I gives in detail an analysis of the State Forest Service; the literature consisting of a poster; Bulletins 742 and 226; report forms, Exhibit 5; instruction, Exhibit 6; letters from the State Forester, Exhibit 4 and 7; letters from the Office of Blister Rust Control, Exhibit 8; and mounts of Blister Rust on black currant leaves that have been distributed, as well as the number of individuals instructed and the number of reports and specimens that have been sent in to this office by the men in the State Forest Service. (Form letters used are referred to as exhibit in this report - copies attached.) Besides the above numerical strength, the State Forester deputized 196 members of the U. S. Forest Service. Instructions to these men have been given through the District Office of the Forest Service. The State Forester in his report will no doubt be able to greatly amplify the results that have been obtained.



TABLE I.

Districts Composed of Following Counties	Classification and:						Literature Distributed								Results		
	District Fire Warden	Association	Employed by Timber Owners	No Compensation	Total	Posters	Bulletin 742	Bulletin 226	Exhibit 4	Exhibit 5	Exhibit 6	Exhibit 7	Exhibit 8	Blister Rust Ribes Mounts	Personal Instruction	Specimens	Reports
Baker	1	4	0	7	12	5	1	12	1	25	5	4	4	1		2	2
Clackamas and Marion	1	12	0	1	14	12	1	14	1	60	12	11	11	1	2		
Clatsop	1	17	9	0	27	15	1	27	1	80	16	15	15	1			
Columbia and Northern Washington	1	14	22	3	40	21	1	40	1	105	21	20	20	1	1	1	1
Coos	2	15	6	1	24	16	2	24	2	80	16	14	14	2	2		
Crater, Deschutes and Jefferson	1	0	0	0	1	1	1	1	1	5	1	0	0	1			
Curry	1	1	5	0	7	5	1	7	1	25	5	4	4	1			
Douglas	1	30	4	1	36	28	1	36	1	140	28	27	1	1	1		
Grant, Morrow, Umatilla, Wheeler	1	0	6	0	7	7	1	7	1	35	7	6	6	1		3	3
Harney	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Hood River, Wasco	1	0	3	0	4	1	1	4	1	5	1	0	0	1	1		
Jackson	1	2	20	0	23	14	1	23	1	70	14	13	13	1	2	2	4
Josephine	1	0	10	2	13	10	1	13	1	50	10	9	9	1	1	1	1
Klamath, Lake	1	13	1	1	16	15	1	16	1	75	15	14	14	1			
Lane, Southern Benton	2	18	4	1	25	19	2	24	2	95	19	17	17	2	1		
Lincoln	1	5	0	0	6	5	1	6	1	30	6	5	5	1			
Linn	1	21	13	0	35	20	1	35	1	100	20	19	19	1	1		
Multnomah	0	0	2	14	16	0	0	16	0	0	0	0	0	0			
Polk, Northern Benton	1	8	15	0	24	9	1	24	1	45	9	8	8	1	1		
Tillamook, Yamhill																	
Southern Washington	2	25	6	2	35	21	2	35	2	105	21	19	19	2	1		
Union	1	3	2	0	6	4	1	6	1	20	4	3	3	1			
Wallowa	1	3	2	0	6	3	1	6	1	15	3	2	2	1			
Total	23	191	130	35	377	235	25	377	25	1165	235	210	210	23	14	9	11





In accordance with article 6 of this agreement, Mr. S. A. Barton, as a representative of this office spent part of his time during July and August instructing the District fire wardens of the coast region of Oregon. Mr. Barton carried with him specimens of White Pine Blister Rust on current leaves and on pine as well as pictures of the disease. Part of his time was devoted to interviewing lumbermen, county agents, and forest service men. The work he endeavored to accomplish may be grouped under six main heads as follows:

1. Show the men specimens of the disease and explain its life history and seriousness.
2. Explain to the fire wardens the type of information that was discussed regarding the distribution of wild currants, gooseberries, and white pine in the wardens' territory.
3. Teach the men how to look for the disease.
4. Instruct the men how to identify the local gooseberries and currants from other plants.
5. Scout for the disease in the association territory.
6. Collect and make records of the wild currants and gooseberries he observed on the association land.

The following members of the Oregon State Forestry Service have been interviewed.

TABLE 11.

Date	Name	Town
	Mr. F. A. Elliott, State Forester	Salem, Oregon
June 2, 29	Mr. Lberly, Deputy " "	" "
July 7	Louis Rhodes, District Warden	(Crown Willamette People) Larch Mountain, Oregon
July 14	W. V. Fuller " "	Dallas, Oregon
July 17	S. S. Duncan " "	Lebanon "
July 23	H. J. Skinner " "	Eugene "
July 29	H. G. Brown " "	Roseburg "
Aug. 1	Mr. Johnson " "	Medford "
Aug. 2	H. M. Bowser " "	Jacksonville"



TABLE II (Continued)

Date	Name	Town
Aug. 7	:C. A. Hoxie, District Warden	:Grants Pass, Oregon
Aug. 11	:J. M. Thomas " "	:Marshfield, "
Aug. 19	:W. E. Mendenhall, District Warden	:Sheridan, "
Aug. 25	:A. L. Segerstens, " "	:Forest Grove, "
Aug. 24	:P. A. Dixon " "	:Vermonia, "

The scouting consisted in observation and inspection of black currants and planted pines at towns where conferences were held as well as trips on foot into forested areas where native pine and Ribes were inspected.

The following list gives the dates, places, and areas scouted.

TABLE III.

Date	Town	Location Scouted
July 6	:Parkdale, Hood River County	:Sec. 6 R. 10 E., T. 1 S.
July 7	:Mt. Hood, " " "	:Sec. 29 R. 3 E., T. 9 S.
July 18	:Mill City, Marion County	:Sec. 2 R. 5 E., T. 10 S.
Aug. 3	:Ashland, Jackson County	:City Park
Aug. 4	:Ashland Creek Water Shed	:Sec. 8, 18, 19, 20, 21, 4. 1 E., T. 29 S.
Aug. 5	: " " " "	:Sec. 6, 7, 18, 19, R. 1 E. T. 40 S.
Aug. 6	: " " " "	:Sec. 1 R. 1 W. T. 40 S.
Aug. 11	:North Bend, Oregon	:Within City Limits
Aug. 12	:Marshfield, " "	: " " "
Aug. 13	:Out of Marshfield	(:NE 1/4 of NW 1/4 Sec. 20 T. 26 S. R. 12 W.)
		(:2 acres planted white pine)
Aug. 14	:Mapleton, Oregon	:Sec. 2 and 3 R. 10 W. T. 18 S.
Aug. 18	:McMinnville	:City Park
Aug. 23	:Forest Grove City	:
Aug. 25	:Tillamook City	:



TABLE IV.

Reports Received From Members of Oregon State Forest Service.

Name	Address	Territory Scouted				General	No. Re-	No. Speci-
		Sec-	Town-	ship	Range			
		tion					ports	mens
Joseph Geppert	Prospect	31	32	3 E.			1	1
J. O. Pierce	Medford	20	36	3 W.			1	1
Rob Odess	"							1
Joseph Geppert	Prospect		325	2 E.	Bald Mt. Lookout			1
L. O. Case	Ukiah	8	7	32	Desolation		1	1
J. W. Arbuckle	"	13	7	31	Meadow Creek		1	1
" " "	"	14	7	31	" "		1	1
W. L. Scott	Baker				District		2	2
Lincoln Peterson	Mist		6N		"		1	1
John H. Kincaid	Williams	32	38	5			1	1

In accordance with the latter part of Article 6 of the agreement, Mr. Barton interviewed the fire wardens again during the early part of November to assemble whatever information the fire warden had secured from his men during the summer's work. This information will be reported by the State Forester as the cooperative blister rust work accomplished by the State Forest Service during the summer.





RESULTS OF STATE FOREST SERVICE WORK AS  
EXPRESSED BY THE DISTRICT FIRE WARDENS.

In order that more definite information and suggestions might be obtained regarding the results of an educational work as well as to obtain any suggestions from the men themselves regarding future work, the following list of questions were sent out to each of the fire wardens on the coast region of Oregon.

1. The number of men under each district fire warden this summer.
2. The number of men who have actually done scouting for the disease.
3. Number of days or hours that have been spent on Blister Rust Work by these men.
4. Number of specimens or reports brought in by the men. (My report to Mr. Elliott will show the specimens sent to this office by organization.)
5. Number of acres under each fire warden. What part has been scouted thoroughly, partly scouted or not scouted at all. Indicate on the map.
6. Location of wild currants and gooseberries if possible. (Get whatever information the men may have.) Also, get the location of native white pine in as much detail as possible as far as abundance and age, etc.
7. Effectiveness of the educational program as it has been carried out by this office.
8. Have specific days been indicated when the men were to devote their time to scouting? How many days? How many were instructed to scout?
9. What suggestions have you regarding future work in the district?
10. Do you consider the efforts to use these organizations for this work as worth while or should it be discontinued?
11. Have you any criticism of the work, that is, as to how better results could be obtained?
12. What future work should be carried out in your organization?

The following reports are in answer to the above list of questions. They contain some valuable information and suggestions which should be considered in planning next season's work.



Report of C. A. Hoxie, Fire Warden for Josephine Co., Grants Pass, Oregon.

1. 7 men.
2. All tried to do some scouting during the months of July, August, and September.
3. All men put in approximately one hour a week. Kincaide who took more interest than the other men put in two hours a week during the three months. I, myself, spent three days actual time besides being on the lookout on my various trips into the woods.
4. Specimens sent to the Seattle office. At the end of the fire season the men reported that they had seen nothing that looked like the blister rust.
5. See map.
6. Sugar pine scattered through the area patrolled and scouted. Mature saw timber running 50 and 60% sugar pine in some places. Gooseberries scattered through the whole district.
7. The program as carried out by the Department of Agriculture was effective with some of the men.
8. No specific days were designated to do scouting. Presumed that instructions would be issued by the state forester.
9. I would suggest that a man familiar with the work should spend some time with each patrolman in his district during the month of June. He should go around with the fire warden so that he could become more familiar with the work in regard to getting the cooperation of the men under him.
10. I consider the efforts to use these organizations as well worth while.
11. Too late in the season when the work was put up to the wardens.
12. Refer to preceding answers.

Report of E. M. Bowser, Fire Warden for Jackson Co., Medford, Oregon.

1. 11 men.
2. All men at one time or another did scouting.
3. Average two hours a week in July, August, and September.
4. All sent in specimens which were forwarded to the Seattle office. No acknowledgment received.
5. Districts thoroughly scouted or not scouted at all are illustrated on the map accompanying this report.





6. Five or six trees, sugar pine, to the acre located in Evans Creek County. Large and small trees and small reproduction. Battle Fall county good stands of sugar pines, which is shown on the map.
7. The program as it has been carried out by the Department of Agriculture has been effective in its result.
8. No specific days were set for doing blister rust scouting owing to the necessity of the fire season taking most of their time for patrol work.
9. Not answered.
10. I consider the efforts of these organizations as worth while.
11. Receiving no reply in regard to the samples forwarded to the Seattle Office, I was in some doubt in regard to the manner of pushing the work in a more vigorous manner.
12. More territory should be scouted during another summer's work by beginning earlier before the fire season starts.

Report of M. J. Skinner, Fire Warden for Eastern Lake Co., Eugene, Oregon.

1. 9 men.
2. All men received the State Forester's instructions and were on the lookout for the disease.
3. During July and August fires kept these men from doing any scouting in definite areas. When the rains came men were immediately pulled off. One hour per week per man would be an estimate of the amount of scouting actually done.
4. None.
6. Wild currant distributed all over the district.

Location of White and Sugar Pine.

Sec. 29 T 23 S R 1 W	30,000	bd. ft.	Sugar Pine
Sec. 35 T 23 S R 2 W	425,000	" "	White Pine
Sec. 35 T 22 S R 1 W	45,000	" "	Sugar Pine
Sec. 27 T 22 S R 1 W	50,000	" "	" "
Sec. 25 T 22 S R 1 W	95,000	" "	" "
Sec. 9 T 22 S R 1 W	10,000	" "	" "
Sec. 26 T 23 S R 2 W	1000,000	" "	White Pine

8. No.
10. The most inexpensive method would be to use this organization if it is considered necessary to carry the work on in this district.



Report of Harvey Brown, Fire Warden for Douglas Co., Roseburg, Oregon.

1. 24 men during July and August. 4 men during April.
2. 5 men did actual scouting work. All the men received information and were on the watch.
3. One man put in four days, the other four put in ten days altogether.
5. See map.
6. See map.
7. The program was effective with the exception that it came just as the fire season opened up. The five men who did actual scouting were much interested and undoubtedly more would have been done if the great number of fires did not intervene.
8. No specific days were indicated to do scouting on account of the fires. The men were released as soon as it rained.
9. This is a new type of work for the men and they should be educated up to it. They need more field instruction.
10. It should be continued in this organization.
11. The work in scouting came too late to get the best results. It should begin earlier in this district.
12. Am not satisfied with the present organization and future work depends on getting better men as guards.

Report of Louis Rhodes, Fire Warden for Hood River Co., Hood River, Oregon.

1. Only one man under the fire warden of this district. He is a camp fire warden under employment by the construction company on the Mt. Hood Loop road.
2. The district fire warden was the only one who did any scouting in this district.
3. Three full days. About one hour per week for July, August and September.
4. In scouting saw no specimens that looked like the sample which he carried.
5. Hood River County outside of the Forest Boundary district was partially scouted in that he was constantly examining wild currants and continually looking for white pine where ever he went.  
Sec. 31 T 1 S R 10 E thoroughly scouted.  
Sec. 23 T 2 N R 9 E " "
6. Wild flowering currant scattered all over district.



NE 1/4 Sec. 12 T 2 N R 12 E, one native white pine 25 years old.  
Sec. 4 T 2 N R 9 E, 50 trees to the acre, 15 years old in  
Sec. 9 T 2 N R 9 E, old burn of the Stanley Smith Lumber Co.

7. More educational work among the general public as an aid to the work of the district warden.
8. With an assistant could have done more effective work.
9. Instructions to scout a definite area annually and beginning the work in the spring.
10. This organization can be made the most effective means for the scouting in this district and consider it worth while to continue.

Report of A. A. Segersten, Fire Warden for Tillamook and part of  
Washington and Yamhill Counties, Forest Grove, Oregon.

I beg to acknowledge receipt of your letter dated October 21, regarding blister rust control in my district.

I was in hopes that I would have the pleasure of taking you over my district, particularly that section where we have a small stand of western white pine. As you know we had a very busy season with fires and the boys were unable to do any investigative work on a large scale. Owing to the large expense incurred during the fire season we let the men go early as was considered safe this fall. They all did keep a lookout for the rust on the wild gooseberries, however, and I am glad to report that no rust was found. The small section of white pine, which we discussed when you were in Forest Grove, confined to the north half of section 5, T. 1 N. R. 5 E. has been closely watched and up to date no rust has appeared.

I wish I had specimens of the gooseberries to send you at this time but had little time to gather them. I went directly from the fire work to cruising and just got back over the week end last night. Am leaving for the woods again in the morning. If these specimens will be of any use to you later on, I will make a special effort to get some on this trip.

Report of J. M. Thomas, Fire Warden for Coos and part of Curry and  
Douglas Counties, North Bend, Oregon.

1. 25 men.
2. The following men did actual scouting work: Westley Brown, Charles Crouch, Even Ridge, Oregon; Fred Southwick, Camas Valley, Oregon; E. J. Banks, Bandon, Oregon; J. G. Houser, Bridge, Oregon; Martin Teeters, Allegany, Ore.
3. These men scouted from July 1 to September 25, putting in one hour per day each.
4. No specimens.





5. T. 30 and 31 R. 9 W. was scouted thoroughly by me, personally, covering a period of five days. These townships have a growth of white pine averaging five to the section with occasional trees running to four feet in diameter.
6. See preceding answer.
8. No special instructions were issued to the men in regard to the time in which they should look for evidence of blister rust.
9. I would suggest that this work be made a part of each man's daily duties. I would also suggest that the matter of blister rust be taken up with all fire guards about the first of June by a representative from the state forester's office or from the Department of Agriculture.
10. I believe that as long as conditions remain as they are, that the use of this organization should be continued in the blister control work.
11. The only criticism which I would make is in regard to the work coming during the fire season.

Report of C. V. Oglesby, Fire Warden for Western Lane Co., Eugene, Oregon.

1. 7 men.
2. 4 men did actual scouting.
3. Each man put in three hours per week during August up to the middle of September.
4. No specimens were found which resembled the blister rust.
5. See map. The sections enumerated in question six have been scouted thoroughly for evidence of blister rust.
6. Section 18 T 18 S R 7 W, Wild currants.  
     "    20, 28, 29, T 15 S R 7 W "    "  
     "    13, 24 T 19 S R 8 W "    "  
 Wild currants are pretty well distributed over the districts but the above sections have been scouted thoroughly. No white pines known.
7. The program as put forth by the Office of Blister Rust Control was effective to the men who were interested in timber. It was more difficult to get results from the other men.
8. No specific time was indicated for scouting due to the numerous forest fires and the lateness of the date when this work was undertaken.
9. Would suggest that work along this line be undertaken in this district the fore part of May.
10. I consider the use of these organizations as worth while if the blister rust investigations warrant these efforts being put forth.
11. The only criticism I would make is with regard to the lateness in which this work was undertaken.



12. Allot a certain time or the state forester should issue instructions to look for blister rust during definite periods.

Report of W. V. Fuller, Fire Warden for Polk and Northern Benton Counties,  
Dallas, Oregon.

1. 7 men.
2. 3 men.
3. 3 men nine days each. All the men did some work.
4. No specimens were found that resembled the rust on currant leaves, and on the areas covered with white pine no trees were found to be infected. White pine areas thoroughly scouted. No specimens collected.
5. All the area covered with white pine enumerated in answer No. 6 was thoroughly scouted.
6. Wild currant scattered throughout the district.

White Pine in the Following Areas:

Sec. 2 T 8 S R 8 W,	White Pine	200,000	bd. ft.
Sec. 6 T 8 S R 7 W, Over Sec. 8 W and up		5,000,000	" "
Sec. 7 T 8 S R 7 W,		150,000	" "
Sec. 12 T 8 S R 8 W, Scattered		100,000	" "
Sec. 12 T 8 S R 8 W,		300,000	" "
Sec. 1 T 8 S R 8 W,	"	100,000	" "
Sec. 4 T 8 S R 7 W, NW 1/4		200,000	" "
Sec. 5 T 8 S R 7 W, N 1/2 Scattered		200,000	" "
Sec. 31 T 7 S R 7 W, Should run 20%		3,000,000	" "
Sec. 32 T 7 S R 7 W, Scattered			
Sec. 22 T 7 S R 8 W,		500,000	" "
Sec. 23 T 7 S R 8 W,		300,000	" "
Sec. 33 T 7 S R 8 W, Abandoned homestead S 1/2 of NW 1/4			
	Total	9,050,000	" "

Sec. 36 T 7 S R 8 W, Small scattering  
 Sec. 34 T 8 S R 7 W, SE 1/4 2 trees cut and burned last summer.

8. Yes. Three men were instructed to scout the above timber.
9. Specific instructions should be issued through the State Forester and someone sent out for field instruction of the men early in the season
10. Worth while to use this organization.
12. Mr. Fuller uses a letter to his men in which he could outline any instructions on Blister Rust work.





Report of J. W. Ferguson, District Warden for Clackamas and Marion Counties,  
Molalla, Oregon.

1. 14 men.
2. All
4. No specimens of blister rust were found.
5. Entire district.
6. No white pine in district.
8. All wardens were given instructions to scout for blister rust during the season when at their regular patrol work. No time was given exclusively to scouting work.
9. Have no suggestions for improvement in scouting work.

Report of S. S. Duncan, Fire Warden, Linn Co., Lebanon, Oregon.

1. 21 men.
2. All men did actual scouting.
3. 15 men 1-1/2 days per week during July, August and to September 15.  
6 men 1 day per week during July, August and to September 15.
4. Found nothing that looked like the blister rust. No samples sent in.
5. On the map the areas where scouting was done is indicated.
6. Wild current in all districts where scouting was done. White pine indicated on the map. This is a scattering stand that extends along the top of the ridge for several miles. Some trees are 3 feet in diameter on the stump.

Sugar Pine: Sec. 6, 7, 8, 18, 17, T 11 S R 4 E.

Scattering, 12 to 15 trees of good size running 4 feet in diameter on the stump.

7. Program was effective.
8. No specific days appointed. Men were told to look for blister rust while patrolling.
9. To establish a definite plan of reporting each week, and to know what kind of report is to be made at the end of the season.
10. Consider the use of the organization as worth while.



Report of P. A. Dixon, Fire Warden for Columbia and part of Washington  
Counties, Vernonia, Oregon.

1. 13 men.
2. Two, Connor and myself.
3. Approximately thirty hours.
4. Specimens gathered from Section 28 T 6 N R 5 W that I thought might have been infected. These were gathered the 10th of June but were lost or mislaid later. The fire went over this area July 10 destroying all the wild currant.
5. Sections which were thoroughly scouted by myself are as follows:  
N. W. 1/4 Section 23 T 5 N R 4 W Old homestead.  
Center of Section 35 T 5 N 4 W       "       "  
N. E. 1/4 Section 12 5 N R 3 W  
Section 24 T 5 N 3 "  
Sections 10 and 11 6 N 3 W  
Connor made special trip for scouting S. E. 1/4 of S. E. 1/4 Section 21  
T 3 N R 5 W and the N E 1/4 of Section 9 T 5 N R 5 W. No evidence of  
blister rust was found though wild currants and gooseberries grow in these  
sections. No white pine has been found in my district.
6. Currants and gooseberries grow all over this district. As far as I can  
determine there is no white pine on this district.
7. I think the educational program carried out by your office is very great  
as it calls attention to a menace that has been overlooked by the most of  
forest forces.
8. No specific days set.
9. I would suggest all patrolmen be required to be on the lookout and report  
at least once a week on territory covered by them in search of blister  
rust, this report to go to the head warden with his daily report, and I  
will see that this is the order if I am in charge of this district next  
season.
10. I think the work can and should be continued with organizations. As I  
am sure that as in other lines the work will get better each year.
11. No.
12. I would suggest that an inspector from your office try to make a visit to  
each patrolman and spend some time with him telling him the importance of  
this work and getting him to do his best.

Besides these reports from the individual fire wardens the following report was  
submitted by Mr. F. A. Elliott, State Forester.



COOPERATIVE WORK OF THE WHITE PINE BLISTER RUST CONTROL  
- Oregon State Board of Forestry -

In submitting a report on the Blister Rust control work through the State Board of Forestry, I desire to outline briefly the method in which this work was undertaken, the areas covered, and the cooperation which the men in this organization have given. The progress that has already been made, I feel is gratifying, but there is still room for improvement in another season's work. This work is somewhat new to the district wardens and to the men under their supervision, but the response which has been made has brought results which I think you will agree are promising for the continuance of the work through this organization.

A letter from my office was addressed in June to each district warden explaining the Blister Rust situation, as it was then confronting us, the nature of the disease and the damage which it threatened to our stands of sugar and white pine timber. Instructions were sent to each district warden regarding scouting work to be done in his district, the arrangements with the Office of Blister Rust Control in regard to a representative coming to him to explain more fully the objects sought and the methods of carrying on investigative work.

Owing to the lateness of the season and the less likelihood of infections being found in the eastern part of the state, it was thought best that the wardens west of the Cascade mountains should be seen first, and then if there was time left for the representative to cover as much of the eastern part of the state as possible. Though the fire season had already begun and in some districts was becoming a serious matter, nevertheless of the fifteen wardens west of the Cascade mountains, twelve were seen and the matter of Blister Rust taken up with them personally. While it would have been desirable for the representative to have gone into the field with each of these men, the time was too limited to take such action, and consequently the interviews were confined to a minute description of the Blister Rust and the methods of detecting infected leaves, the necessity of reporting the occurrence of ribes and white pine and the necessity of having all men under each district warden put forth his utmost efforts in connection with this work. In the meantime, responses were being received from wardens throughout the state, showing their interest and their willingness to cooperate as far as possible.

To date reports have been received from thirteen of the twenty-two wardens in the state. There has been approximately 1046 sections scouted. Of this area, some has been thoroughly gone over; other portions have been partially scouted in connection with patrol work. Wherever white or sugar pine was known to exist, or where it might be thought to be growing, these areas were thoroughly scouted and no infections of Blister Rust have been reported.

In this connection, I desire to call your attention to the stand of white pine existing in the western portion of Polk county, consisting of approximately ten million feet. This is probably the largest stand of white pine in the State of Oregon, lying in close proximity to the infections of the Blister Rust recently reported in the southwestern portion of the State of Washington. Other isolated tracts have been reported through the coast range





from Washington county to the southern portion of the state.

Reports have been received in connection with the sugar pine stands in Douglas, Josephine, and Jackson Counties, lying without the United States forest reserves, showing that these areas have been scouted intensively and no infections have been discovered so far. The reports of the fire wardens indicate areas which have been scouted containing no white or sugar pine timber, though it is abundant with Ribes which were examined closely with similar results. The reports have yielded a great amount of information which will be valuable in the future and while the area covered for a first year's work has been of considerable extent it only emphasizes the vast amount of territory which should still be inspected.

All the reports indicate that scouting has been conducted by practically all of the 250 men under the district wardens, in conjunction with their patrol work. In most cases the time which was devoted to this work has not been segregated, and it is a difficult matter to determine the exact number of days that have been devoted to the work by each man. It would be reasonable to assume, under these conditions, that at least 2500 man days have been spent in conducting scouting work in this state during the past summer by this organization. The time devoted to Blister Rust work is less than was anticipated, but it is practically accounted for by the severe fire conditions in some portions of the state during the months of July and August - from the time that the Blister Rust situation was first presented to them. Five hundred four actual days have been devoted to intensive scouting by 83 men in the areas west of the Cascade mountains. This time devoted to investigations in white or sugar pine areas and, in most cases, was done separate and apart from patrol duty.

While reports are not available in regard to the work in the eastern portion of the state, interest was none the less keen, and it is felt that subsequent reports will show that equal results have been accomplished in that portion of the state.

One of the most gratifying results in connection with the reports received from district wardens has been the interest and cooperation which they have shown in a work which has been so totally new to most of them. Wardens have taken hold in a creditable manner and, in most cases, have endeavored to get the best results possible. There has come to our attention through various channels the interest which they have shown in various ways. One warden voluntarily placed an exhibit in the county fair in his district hoping by this means to reach a large number of people for the purpose of getting information in regard to white pine, or planted white pine, or black currants. I am informed that in the recent school campaign conducted in this state that reports have been received where the fire wardens have assisted in gathering information which was the basis of reports from school districts. Invariably, they have considered the work as well worth while and think that it should be carried on in the future. However, underlying each report is the conviction that they are desirous of more information or field experience in connection with this work. It is felt with the experience which they have gained this summer of better knowledge of scouting methods and beginning work earlier in the season even better results could be attained during the period of another season.



OREGON STATE BOARD OF FORESTRY

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Oregon Agricultural College

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OREGON STATE BOARD OF FORESTRY  
Salem

TO ALL DISTRICT WARDENS:

I am enclosing for your information some circulars regarding the white pine blister rust. This is a very serious disease of the white pines. It is beyond eradication in white pine areas in the eastern state. It has recently been found in British Columbia and the Puget Sound region of Washington.

Every effort will be made to stamp out the disease where it now exists. It is imperative that every man in the woods become as familiar with the disease as possible. Watch for it and report any probable infected areas so that they may be investigated and the disease eradicated before it has become widely distributed. Currents and gooseberries, both wild and cultivated, should be inspected for the disease. District Wardens should watch for and examine these wherever they are found.

There are many wild currents and gooseberries in our western woods. All are capable of taking the disease but some are much better carriers than others. It is very important that the range of distribution and abundance of all the wild species of currents and gooseberries in Oregon should be determined this summer. District Wardens can aid greatly in getting this information by collecting specimens in fruit or flower and send them in. Notes regarding the abundance and distribution of the different species and of the presence or absence of white and sugar pine in the particular locality where these species grow will be very valuable information. District Wardens will consider as a part of their summer's work inspection for the disease and securing of information regarding the distribution of wild currents and gooseberries as well as varieties of white pines.

Posters and other information are being enclosed which will assist you in identifying the blister rust. All reports regarding the presence of the disease, specimens of diseased material, plantings of black currents and currant and gooseberry specimens as well as requests for information should be sent to the Office of Blister Rust Control, 429 Lyon Building, Seattle, Washington.

Within the near future a representative of the Bureau of Plant Industry will visit you and be glad to answer any questions you may have along this line. He will again visit you in the fall for the purpose of tabulating the results of your season's investigations.

Forms are enclosed for noting discoveries you may make and records should be kept so that when this representative visits you at the end of the season you have everything in shape for his immediate use. As soon as all of your patrolmen and lookouts are on, I will also send them a letter calling their attention to this infection and enclosing printed material put out by the Bureau of Plant Industry. Your patrolmen will be instructed to make their reports to you in order that you may have all the material for your district accumulated by the end of the season.

Very sincerely yours,

P. A. ELLIOTT  
State Forester.



# FORM REPORT FOR BLISTER RUST CONTROL BY COOPERATING AGENCIES

STATE OF \_\_\_\_\_ COUNTY OF \_\_\_\_\_ DATE \_\_\_\_\_ 192\_\_\_\_\_

## WILD CURRANTS, GOOSEBERRIES AND WHITE PINE

[illegible]

BY WHOM REPORTED.  
SEE OTHER SIDE

ADDRESS

**ltivated Currants (Cu.) Gooseberries (Gb.) Black Currants (Bl. Cu.) and Planted White Pine.**

[illegible]

REMARKS:



INSTRUCTIONS FOR FILLING OUT BLISTER RUST REPORT.

1. Wild Currants, Gooseberries and White Pine.

A. Species. The particular kind of plant may be determined in either of two ways:

1. Indicate the specimen by a number and submit a specimen for that number so that the species can be determined.
2. Send in specimens with a number, the collector keeping a duplicate specimen bearing that number.

Prompt determinations will be made and reported back.

B. No. per acre.

Make a count on an acre plot if possible. Otherwise estimate.

C. Location.

Give by Section (Sec), township (Tp) and Range (R).

Plot the areas on a township map if you have one and submit with your report.

D. Type of locality, swamp, stream, mountain, sloping east, west, north, or south, elevation.

E. Tree Association.

Indicate the kinds of trees that grow nearby.

F. Burn, Logged-off or Natural State.

Give age of burn or how long since being logged or whether in a virgin forest.

G. Diseased with Blister Rust.

If you find anything that looks like the disease, state so in this column and send in specimens.

II. Cultivated Currants, Gooseberries, Black Currants and Planted White Pine.

Any of these plantings may have imported from a disease infected area and consequently may be the cause of introducing the disease. Inspect those at farms in your district, deserted places and mining camps. Watch especially for planted white pine and the cultivated black currants. Inspect them very carefully.

A. Location.

Give the owner's name and address if possible and the location of the plants. If located in a town, give the location as accurately as possible. If at a deserted place, indicate township, section and range.

B. No. of plants in the planting.

Indicate the number of plants of each kind that you find in the planting.

C. No. of plants diseased with B. R.

Examine the plants carefully and report the number that appear to be diseased. Send in specimens of everything that may be the disease.





## OREGON STATE BOARD OF FORESTRY

Salem

July 17, 1922.

Address reply to  
"State Forester"

F. A. Elliott,  
State Forester.

TO ALL PATROLMEN AND LOOKOUTS:

I am enclosing for your information some circulars regarding the white pine blister rust. This is a very serious disease of the white pines. It is beyond eradication in white pine areas in the eastern states. It has recently been found in British Columbia and the Puget Sound region of Washington.

Every effort will be made to stamp out the disease where it now exists. It is imperative that every man in the woods become as familiar with the disease as possible. Watch for it and report any probable infected areas so that they may be investigated and the disease eradicated before it has become widely distributed. Currants and gooseberries, both wild and cultivated, and especially the English black currant together with white and sugar pines should be inspected for the disease.

There are many wild currants and gooseberries in our western woods. All are capable of taking the disease but some are much better carriers than others. It is very important that the range of distribution and abundance of all the wild species of currants and gooseberries in Oregon should be determined this summer. You can aid greatly in getting this information by collecting specimens in fruit or flower and by making notes regarding the abundance and distribution of the different species together with information as to the presence or absence of white and sugar pine in the particular locality where these species grow. All specimens collected should be sent to your District Warden. Information collected should be tabulated and turned in to him at the end of the season.

Federal Forest Service as well as State Forest Service employees have been requested to assist the Bureau of Plant Industry in this work. Information is being enclosed which will assist you in identifying the blister rust. If additional information is desired, consult your District Warden and if he is unable to answer your question, you should write the Office of Blister Rust Control, 429 Lyon Building, Seattle, Washington.

It is believed that the knowledge you already possess and observations made by you during this summer in connection with your regular work will by this fall enable you to give your District Warden a fairly accurate report as to the presence or absence of this disease in your District, together with the occurrence and distribution of currants, gooseberries, white and sugar pine.

Very truly yours,

F. A. ELLIOTT

State Forester.



UNITED STATES DEPARTMENT OF AGRICULTURE  
Bureau of Plant Industry

429 Lyon Building,  
Seattle, Washington.  
July 17th, 1922.

To Forest Officer:

State of Oregon.

I am enclosing for your information a poster concerning White Pine Blister Rust. Please post this in a conspicuous place where you may have it for reference and where you may call it to the attention of your associates and the general public. I am also enclosing blanks which will fit your field notebook for recording information. Send these to your District Warden. We shall send you more literature from time to time.

In parts of Oregon white pines (five-leaved pines) do not occur as commercial stands but only as an occasional tree. If the Blister Rust gets into these regions the scattered pines will become infected and enable it to spread to the best stands. The wild gooseberries and currants occur in nearly all localities. You can give valuable aid in preventing the disease gaining a foothold by looking for it on both wild and cultivated varieties of currants and gooseberries and on white pines. Also if you can report the occurrence of white pines in your district this information would prove invaluable in future inspection for this disease.

Very truly yours,

Assistant Pathologist,  
Office of Blister Rust Control,  
Bureau of Plant Industry.

Enclosures.

- 1 - Blister Rust Poster.
- 1 - Set of Note Blanks.
- 1 - Copy of Letter of State Forester.





BRIEF SUMMARY OF THE SCHOOL CAMPAIGN IN OREGON

I.	Number of teachers, to whom the school program was sent--	5,855
II.	Number of reports received from teachers-----	2,127
III.	Scouting.	
	Number of towns to be scouted-----	750
	Number of towns scouted-----	661
IV.	Location of white pines.	
	Number reporting white pine either native or planted-----	127
	Number of planted white pine trees located-----	837
	Number of specimens of white pine sent in-----	6
V.	Location of Ribes other than black currants.	
	Number reporting Ribes present-----	659
	Number of Ribes specimens other than black currants sent in-----	224
VI.	Location of black currants.	
	Number reporting black currants present-----	45
	Number of black currants reported-----	1,927
	Number of black currants specimens sent in-----	23
VII.	Total number of specimens of all kinds sent in-----	328

# BRITISH MUSEUM OF THE HISTORY OF MAN

I.	Number of teachers, to whom the school program was sent--	3,855
II.	Number of reports received from teachers--	3,157
III.	Accounting.	
	Number of towns to be accounted--	730
	Number of towns accounted--	601
IV.	Location of white pines.	
	Number reporting white pine either native or planted--	731
	Number of planted white pine trees located--	687
	Number of specimens of white pine sent in--	0
V.	Location of linden other than black currants.	
	Number reporting linden present--	309
	Number of linden specimens other than black currants sent in--	324
VI.	Location of black currants.	
	Number reporting black currants present--	45
	Number of black currants reported--	1,327
	Number of black currant specimens sent in--	23
VII.	Total number of specimens of all kinds sent in--	328

## BLISTER RUST SCHOOL CAMPAIGN IN OREGON - 1922

I. Purpose: The object of the school campaign has been as follows:

- A. Inform the public regarding the blister rust.
- B. Use the teachers and school children as an auxiliary scouting force:
  - 1. To look for the disease and send in specimens of anything that resembled it.
  - 2. To report the location of planted black currants.
  - 3. To report the location of planted white pine.

### II. Conferences.

The plan of a White Pine Blister Rust School Campaign was discussed on June 2, with Mr. J. A. Churchill, Superintendent of Public Instruction in Oregon. The outline of the campaign as it was submitted to Mr. Churchill is given in Exhibit 1-6. On the basis of this outline the following agreement regarding the matter was entered into by Mr. Churchill and Mr. Stillinger.

#### MEMORANDUM OF UNDERSTANDING BETWEEN MR. CHURCHILL, SUPERINTENDENT OF PUBLIC INSTRUCTION OF OREGON AND MR. STILLINGER, OFFICE OF BLISTER RUST CONTROL.

June 2, 1922.

- 1. Mr. Churchill consents to a school campaign such as outlined by Mr. Stillinger.
- 2. The following procedure is to be followed:

##### A. Date.

Schools begin in eastern Oregon about September 15.

" " " western " " October 1.

Rural schools begin October 10-18.

Program to be put into effect the second week after each school has begun.

##### B. Mailing lists.

September 1, Mr. Churchill will send a letter to county superintendents urging their support and requesting as complete a list of the teachers in their county as they have.

- C. All letters that go out will have the written signature of Mr. Churchill. Letters to be dated September 9, and will be addressed "To the Teacher." Use mimeographed letterheads of the Educational Department.





D. Mr. Churchill will provide clerical help on hand.

E. Expense.

1. Clerical help: The state cannot bear any additional expense but will give use of clerical help on hand.
2. Postage: Two solutions either of which is o.k. with Mr. Churchill:
  - a. Use postage: Blister rust Office will have to stand the expense of postage.
  - b. Mr. Churchill to be made a collaborator of Bureau of Plant Industry so that franks may be used. This seems the desirable way to handle this matter since it will reduce the expense. To get the best results it is necessary that letters be signed by Mr. Churchill.

F. Reply envelopes to be returned to Mr. Churchill's office addressed to him.

Reasons:

1. Return to Churchill will carry more weight.
2. His office can check up replies and request replies when none are received.
3. Will have to have someone at Salem to handle material because, due to the varying time of school opening, material will be sent out over a period of a month.
4. Mr. Churchill thinks that all correspondence should go out under his name to get results and all replies come to him.

G. Mr. Barton to attend to handling the whole matter at Mr. Churchill's office during the campaign.

H. Specimens to be referred to Professor Barss for examination from time to time as they arrive.

I. Supplies:

1. Blister Rust Office to mimeograph letters to teachers--7000  
and form report for teachers-----7000
2. Supply colored circular, posters and mailing tubes-----7000
3. Supply envelopes 8-1/2 x 11-1/2" with return address---7000  
6000 to be preapred with address "J. A. Churchill,  
Superintendent of Public Instruction, Salem, Oregon."  
1000 to be unaddressed.



3. Mr. Churchill will provide clerical help on hand.

4. Response.

1. Clerical help: The state cannot bear any additional expense but will give use of clerical help on hand.

2. Postage: Two solutions either of which is O.K. with Mr. Churchill:

a. Use postpaid: Station Post Office will have to stamp the expense on postage.

b. Mr. Churchill to be made a collector or person of that interest, so that forms may be used. This seems the desirable way to handle this matter since it will reduce the expense. To get the best results it is necessary that letters be signed by Mr. Churchill.

3. Reply envelopes to be returned to Mr. Churchill's office addressed to him.

4. Reasons:

1. Return to Churchill will carry more weight.

2. His office can check up replies and request replies when none are received.

3. Will have to have someone at station to handle material, one to the varying time of school opening. Material will be sent out over a period of a month.

4. Mr. Churchill thinks that all correspondence should go out under his name to get results and all replies come to him.

5. Mr. Norton to attend to handling the whole matter at Mr. Churchill's office during the campaign.

6. Special ones to be referred to for discussion arise for examination from time to time as they arrive.

7. Supplies:

1. Station Post Office to supply letters to teachers--7000 and form report for teachers--7000  
2. Supply envelopes 3-1/2 x 11-1/2 with return address--7000  
3. Supply colored envelopes, postcards and mailing labels--7000  
4. 5000 to be prepared with address "J. L. Churchill, Superintendent of Public Instruction, Salem, Ore. 97301".  
5. 1000 to be undressed.

- |   |      |
|---|------|
| 4. Supply franked post cards for acknowledging replies<br>and requesting other reports----- | 8000 |
| 5. Franked envelopes  | 1000 |

J. Supplies to be sent to Mr. Stanley Barton, Salem, Oregon, and prepared there and sent out from there.

### III. Summary of Procedure followed:

1. During the summer Mr. Barton conferred with 15 county superintendents and 14 city superintendents on the coast region of Oregon. He explained the blister rust situation and asked for their cooperation in the school campaign. (See table for superintendents interviewed.)
2. The campaign was carried on from September 1 to November 15.
3. Mr. Churchill, Supt. of Public Instruction, has been made a collaborator of the Office of Blister Rust Control, Bureau of Plant Industry, U. S. Department of Agriculture.
4. Mr. S. A. Barton, Agent of the Office of Blister Rust Control, located in quarters provided by the Superintendent of Public Instruction, was in immediate charge of the details of the work, under the general supervision of C. R. Stillinger, Office Blister Rust Control.
5. On September 1, a letter (Exhibit 7) was sent to all county superintendents by Mr. Churchill requesting that the county superintendents cooperate by sending in a list of the teachers of that county. At the same time a similar request was sent to all superintendents of Independent school districts (Exhibit 8).
6. On September 12, a second letter (Exhibit 9) was sent to those county superintendents from whom a list had not been received. Likewise a letter (Exhibit 10) was sent to those city superintendents who had not sent in lists.
7. By September 22, several lists still had not been received, consequently night messages by wire (Exhibits 11 and 12) were sent to county and city superintendents from whom lists had not been received.
8. In cases where the lists were incomplete school programs were prepared for the number of teachers listed as employed during last year. The difference between the number of teachers employed last year and the number on the list that was received, was forwarded to the county superintendent, unaddressed, requesting that they distribute the material to the teachers as they received the additional names from the different schools.
9. The school program which was forwarded to each teacher consisted of the following:
  - 1 Blister Rust Poster.
  - 1 Letter to the teacher signed by J. A. Churchill, (Exhibit 4).
  - 1 Bulletin 226 with enclosed circular (Exhibit 6).
  - 2 Teacher's report forms, (Exhibit 5).

4. Supply form as per order for accompanying facilities  
and requesting other reports-----8000  
5. Printed envelopes 1000

1. Supplies to be sent to Mr. Thomas, Nelson, Nelson, and  
prepared there and sent out from there.

### III. Summary of procedure followed:

1. During the summer of 1937, Nelson contacted with 13 county superintendents  
and 14 city superintendents on the coast region of Oregon. He ex-  
plained the district visitation and asked for their cooperation  
in the school campaign. (See table for superintendents interviewed.)

2. The campaign was conducted from September 1 to November 15.

3. Mr. Orin Hill, Agent of Public Instruction, has been made a  
coordinator of the office of public instruction, Bureau of Plant  
Industry, U. S. Department of Agriculture.

4. Mr. A. A. Nelson, Agent of the office of public instruction,  
located in quarters provided by the Superintendent of Public Instruc-  
tion, was in immediate charge of the details of the work, under the  
general supervision of C. A. Hillinger, Office of Public Instruction.

5. In September 1, a letter (Exhibit 7) was sent to all county super-  
intendents by Mr. Orin Hill requesting that the county superintendents  
cooperate by sending in a list of the schools of the county. At  
the same time a similar request was sent to all superintendents of  
independent school districts (Exhibit 8).

6. On September 12, a second letter (Exhibit 9) was sent to those  
county superintendents from whom a list had not been received. Like-  
wise a letter (Exhibit 10) was sent to those city superintendents who  
had not sent in lists.

7. By September 22, several lists still had not been received, conse-  
quently night messages by wire (Exhibits 11 and 12) were sent to  
county and city superintendents from whom lists had not been received.

8. In cases where the lists were incomplete school programs were prepared  
for the number of teachers listed as employed during last year. The  
difference between the number of teachers employed last year and the  
number on the list that was received, was forwarded to the county  
superintendent, unaddressed, requesting that they distribute the  
material to the teachers as they received the additional names from  
the different schools.

9. The school program which was forwarded to each teacher consisted of  
the following:

1. District visitation letter.
2. Letter to the teacher signed by J. A. Orin Hill, (Exhibit 4).
3. Bulletin 280 with enclosed circular (Exhibit 5).
4. Teacher's report form, (Exhibit 6).



- 1 Large manilla envelope 8 x 10-1/2" addressed to J. A. Churchill, Supt. of Public Instruction, Salem, Oregon.
10. In order to check off quickly replies from teachers, the counties in the state were numbered consecutively. Likewise the teachers in each county were numbered consecutively. These two numbers with a dash between them were placed upon the upper left hand corner of the return envelope. Thus, when a reply was received the county and the teacher's name could be quickly checked off. It also made possible the location of reports on which the names of the towns were illegible. Likewise reports could be located when the blank outline at the head of the teacher's report was not filled out.
11. Allowing a reasonable time, generally two weeks, for replies after the school program had been mailed, a card reminder (Exhibit 13) of the fact that no report had been received was sent to each teacher.
12. After sufficient time had elapsed for a reply in response to the first post card which was sent out (Exhibit 13), a second post card (Exhibit 14) was sent. If no reply was received in response to these efforts, no further steps were taken except in the case of large high schools. In these cases a personal letter (Exhibit 15) was sent to the principal of that school, urging his active cooperation.
13. All correspondence has been under the signature of Mr. Churchill, although handled by Mr. Barton, so that the whole program fitted in with the regular school organization procedure.
14. All specimens were forwarded for examination to Professor H. P. Barss, Pathologist, Oregon Agricultural College, Corvallis, Oregon. All reports of the teachers in the school campaign are on file in Professor Barss' office. Professor Barss has answered all inquiries for other than blister rust information.

#### IV. Cooperation.

The State Department of Public Instruction has been very active in its cooperation in this work. Mr. Churchill has taken a personal interest in the work and has very willingly given much of his time and advice in furthering the work. While on inspection trips during the summer and fall, he has urged the teachers and county superintendents to carry out the campaign. He has provided quarters for Mr. Barton to work as well as considerable clerical and stenographic help.

Professor H. P. Barss, Pathologist, Oregon Agricultural College, has given freely of his advice, has carefully examined all specimens sent in and has sent replies in response to many inquiries for other than blister rust information.

1 large manila envelope 10-1/2x14-1/2 addressed to J. W. Churchill,  
Dept. of Public Instruction, Salem, Oregon.

10. In order to check off quickly replies from teachers, the committees in the state were numbered consecutively. Likewise the teachers in each county were numbered consecutively. These two numbers with a dash between them were placed upon the upper left hand corner of the return envelope. Thus, when a reply was received the county and the teacher's name could be quickly checked off. It was also possible the location of reports on which the names of the teachers were indicated. Likewise reports could be located when the name alone at the head of the teacher's report was not filled out.

11. Allowing a reasonable time, generally two weeks, for replies after the school program had been mailed, a card number ( Exhibit 10) of the fact that no report had been received was sent to each teacher.

12. When sufficient time had elapsed for a reply in response to the first post card which was sent out ( Exhibit 10), a second post card ( Exhibit 11) was sent. If no reply was received in response to these efforts, no further steps were taken except in the case of large high schools. In these cases a personal letter ( Exhibit 12) was sent to the principal of that school, urging his active cooperation.

13. All correspondence has been under the signature of Mr. Churchill, although handled by Mr. Barton, so that the whole program fitted in with the regular school organization procedure.

14. All reports were forwarded for examination to Professor H. P. Barnes, Pathologist, Oregon Agricultural College, Corvallis, Oregon. All reports of the teachers in the school campaign are on file in Professor Barnes' office. Professor Barnes was answered all inquiries for other than district mail information.

#### 15. Cooperation.

The State Department of Public Instruction has been very active in its cooperation in this work. Mr. Churchill has taken a personal interest in the work and has very willingly given much of his time and advice in furthering the work. While on inspection trips during the summer and fall, he has urged the teachers and county superintendents to carry out the campaign. He has provided quarters for Mr. Barton to work as well as comfortable clerical and stenographic help.

Professor H. P. Barnes, Pathologist, Oregon Agricultural College, has given freely of his advice, has carefully examined all specimens sent in and has sent replies in response to many inquiries for other than district mail information.



## V. Acquisition of lists of teachers.

Our inability to secure complete or even partial lists of teachers has been the greatest handicap that has been encountered in developing the school campaign. This was due to our inability to secure the prompt cooperation of some county and city superintendents as well as due to the different times at which the schools started. This retarded from the effectiveness of the work in the eastern part of the state due to our consequent inability to get literature to the teachers before the leaves fell. On the coast region this handicap was not so apparent because the leaves remain on the plants much longer.

In response to the first letter (Exhibit 7) to the county superintendents requesting a list of their teachers, twenty lists were received. The second letter (Exhibit 9) brought six more while the remaining ten were received only after a telegram was sent (Exhibit 11). Thus, by October 26, at least partial lists were received from all county superintendents. (See Table I.)

In the case of city superintendents, the first letter (Exhibit 8) brought in sixteen lists, the second letter (Exhibit 10) five lists, and the telegram (Exhibit 12) two lists. Only one superintendent failed ultimately to send in a list. (See Table I.)

## VI. Blanks distributed. (Unaddressed programs sent to county or city superintendents for distribution.)

As may be seen from Table I the lists of teachers which were received especially from county superintendents were far from complete. In an effort to get the literature to every teacher and to get it out in time to be of use, unaddressed sets of the school program were sent out direct to the county and city superintendents. The number of teachers listed in the county or city for last year was taken as a basis and the difference between this number and the number of teachers on the list that was sent in was used as the number that was forwarded to the county or city superintendents asking them to address them to their teachers as they received their names. As shown in Table I a total of 920 blanks were sent to county superintendents and 10 were sent to city superintendents. No report from the superintendents as to when these blanks were sent has been received, consequently the success of distribution of literature in this way is not known.

Some known facts would indicate that distribution of literature in this way is not entirely successful. It should be avoided as far as possible. If interviews could be held with the county superintendents beforehand and their active cooperation secured, this method of distribution might be fairly successful. In the case of city superintendents this method of distribution is probably the desirable one to follow in most cases.

## VII. Getting in reports.

In order to secure as many reports and specimens as possible as well as to impress upon the teacher the importance of the work, a post card follow-up system was used. If no report had been received from the teacher two weeks after the literature had been sent out the first reminder (Exhibit 13)

Our inability to secure complete or even partial lists of teachers has been the greatest handicap that has been encountered in developing the school campaign. This was due to our inability to secure the cooperation of some county and city superintendents as well as one to the different times at which the schools started. This returned from the effectiveness of the work in the eastern part of the state due to our consequent inability to get literature to the teachers before the leaves fell. On the other hand, this handicap was not so severe because the leaves remain on the limbs much longer.

In response to the first letter (Exhibit 7) to the county superintendents requesting a list of their teachers, twenty lists were received. The second letter (Exhibit 8) brought six more while the remaining ten were received only after a telephone call (Exhibit 11). Thus, by October 16, at least partial lists were received from all county superintendents. (See Table 1.)

In the case of city superintendents, the first letter (Exhibit 9) brought in sixteen lists, the second letter (Exhibit 10) five lists, and the third letter (Exhibit 11) two lists. Only one superintendent failed ultimately to send in a list. (See Table 1.)

V. Plans established. (Exhibit 12) Program sent to county and city superintendents for distribution.

As may be seen from Table 1 the lists of teachers which were received especially from county superintendents were far from complete. In an effort to get the literature to every teacher and to get it out in time to be of use, handwritten sets of the school program were sent out direct to the county and city superintendents. The number of teachers listed in the county or city for last year was taken as a basis and the difference between this number and the number of teachers on the list that was sent in was used as the number that was forwarded to the county or city superintendents asking them to pass them to their teachers as they received their names. As shown in Table 1 a total of 250 names were sent to county superintendents and 10 were sent to city superintendents. No report from the superintendents as to what these names were sent has been received, consequently the success of distribution of literature in this way is not known.

These names would indicate that distribution of literature in this way is not entirely successful. It should be avoided as far as possible. If interviews could be held with the county superintendents before making the literature collection secured, this method of distribution might be fairly successful. In the case of city superintendents this method of distribution is probably the desirable one to follow in most cases.

VII. Getting in reports.

In order to secure as many reports and specimens as possible as well as to insure upon the teacher the importance of the work, a post card follow-up system was used. If no report had been received from the teacher two weeks after the literature had been sent out the first reminder (Exhibit 13)

was sent to all teachers who had not reported. 5,533 of these notices were sent out.

In about two weeks after the first notice, a second notice (Exhibit 14) was sent. 3,496 of these notices were sent out. The time for sending out these notices was indicated by a considerable decrease in the number of replies per day.

This follow-up system was very effective and increased the replies that were received by fully 100 per cent, as shown in Table I.

was sent to all teachers who had not reported. 3,436 of these notices were sent out.

In about two weeks after the first notice, a second notice (Exhibit 1A) was sent. 3,436 of these notices were sent out. The time for sending out these notices was indicated by a considerable decrease in the number of replies per day.

This follow-up system was very effective and increased the replies that were received by nearly 100 per cent, as shown in Exhibit 1.



TABLE I. VIII. SUMMARY OF SCHOOL CAMPAIGN BY COUNTIES AND INDEPENDENT SCHOOL DISTRICTS IN OREGON.

General County and Independent School Districts in That County	Receipt of Lists of Teachers: Blanks										Replies Received										Nature of Replies										Specimens																			
																					General																													
																					Whites										Roses																			
																					Pine										Present										Absent									



Adams	1900	100	100	
Adams	1901	100	100	
Adams	1902	100	100	
Adams	1903	100	100	
Adams	1904	100	100	
Adams	1905	100	100	
Adams	1906	100	100	
Adams	1907	100	100	
Adams	1908	100	100	
Adams	1909	100	100	
Adams	1910	100	100	
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Adams	1989	100	100	
Adams	1990	100	100	
Adams	1991	100	100	
Adams	1992	100	100	
Adams	1993	100	100	
Adams	1994	100	100	
Adams	1995	100	100	
Adams	1996	100	100	
Adams	1997	100	100	
Adams	1998	100	100	
Adams	1999	100	100	
Adams	2000	100	100	

IX. Summary of School Campaign. (See Table I.)

1.	Number of counties-----	36
2.	Total number of students, July 1, 1922-----	168,873
3.	Total number of teachers last year-----	6,805
4.	Total number of names of teachers received-----	5,855
5.	" " " Independent School Districts-----	24
6.	" " " teachers in Independent School District last year-----	2,361
7.	" " " " " Independent School District whose names were received for the school campaign-----	2,351
8.	Total number of school programs sent direct to teacher----	5,855
9.	" " " " " " as blanks to the county or city superintendents-----	930
10.	Conferences.  Number of conferences held with county superintendents----- " " " " " city "	15  14
11.	Requests for lists of teachers.  Number of first letters (Ex.7) to county superintendents---- Number of Second letters (Ex.9) to county superintendents--- Number of telegrams (Ex.11) to county superintendents----- Number of first letters (Ex.8) to city superintendents----- Number of second letters (Ex.10) to city superintendents----- Number of telegrams (Ex.12) to city superintendents-----	36 10 10 24 7 2
12.	Literature distributed.  Posters----- Letters to teachers (Exhibit 4)----- Envelopes 8x 10-1/2 inches with return address----- Teachers' report forms (Ex.5)----- Bulletins 226-----	6,805 6,805 6,805 13,610 6,805



Leaflets within Bulletin 226 (Ex. 6)-----6,805  
 Post cards sent first time requesting reports (Ex.13)-----5,533  
 " " " second " " " (Ex.14)-----3,496

### 13. Results.

#### A. Educational.

Number of teachers informed regarding blister rust-----6,805  
 " " students " " " " 168,000  
 " " parents instructed by students-----112,000

#### B. Scouting for blister rust.

Number of reports of scouting for blister rust-----2,127  
 " " " stating results of scouting but giving no  
 information regarding black currants or white pine-----821  
 Number of individual communities scouted one or more times----661

#### C. Location of white pines.

Number stating that white pines were present-----127  
 " " " " " " not present-----720  
 " of white pine trees reported-----837

#### D. Location of black currants.

Number stating that black currants were present-----45  
 " " " " " " not present-----314  
 " of black currants reported-----1,927

#### E. Presence or absence of Ribes in general, cultivated or wild.

Number reporting Ribes present-----659  
 " " " absent-----102

#### F. Specimens received.

Number of reports containing specimens-----328  
 Nature of specimens sent in.  
 a. Reports containing Ribes other than black currants-----224



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1. Presence or absence of lines in general, cultivated or wild.

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...it does not appear to exist.

•. ovate containing fibres about 1000, granular



b.	Reports containing black currant specimens-----	23
c.	" " white pine specimens-----	6
d.	" " other plant specimens-----	75

#### G. Discussion of results.

About 85 per cent of the reports that were received were made on the forms sent to the teachers for that purpose. The other reports that were written in the form of a letter as a rule were very unsatisfactory as far as any specific information was concerned.

Several requests were received from the larger high schools for lectures on the disease. It has been impossible to fulfill these requests.

There were 750 individual towns within or in the vicinity of which one or more teachers were located. All teachers of these communities were sent the school program. Although each teacher in each town did not make a report, reports that the community had been scouted for blister rust were received from one or more teachers from 661 communities or 88 per cent.

Although the percentage of replies from schools are high, the actual figure of the number of teachers reporting is low. 2,127 reports from individual teachers out of a total of 5855 teachers were received. This is a percentage reply of 36. The percentage of replies is low for the following reasons:

1. Due to our inability to get the exact dates when the schools started, many of the programs were returned.
2. In some cases the school programs were received too late in the season for it to be carried out. This was due to the impossibility of getting in the teachers' names on time.
3. Upon receiving the post card notices many teachers reported that they had never received the literature. It was then too late to send them the school program although in each case they were forwarded literature. Evidently the mail had gone astray. About 100 were returned because of inability to deliver.
4. In a great many cases the superintendent of schools (city) requested his teachers to report to him. He then reported for his entire teaching staff. As a rule he made no statement of the names or number of teachers he was reporting for. The principals of high schools in many cases did likewise.
5. Many teachers carried out the campaign, but because the results were negative, did not make a report. Many so stated in reply to the second post card notice.
6. In many cases the work was done by the botany or agricultural classes, especially in the high schools. None of the other classes or teachers carried on the work, hence they did not make a report.

1. Reports containing blank columns for the following items:  
 a. Date given  
 b. Name of school  
 c. Name of principal  
 d. Name of teacher

## 2. Discussion of results.

As far as the results of the reports that were received are concerned, the following points are to be noted: (1) The reports that were received were very unsatisfactory in that they contained information that was not requested.

Several requests were received from the High School for information on the results. It has been impossible to fulfill these requests.

There were two individual cases within a in the vicinity of which one or more teachers were located. All teachers of these communities were sent the school program. Although each teacher in each town did not receive a report, it is estimated that the community had been reached for the purpose of receiving from one or more teachers from the community or its principal.

Although the percentage of replies from schools are high, the actual number of the number of the reports received is low. The reports from individual teachers out of a total of 1000 teachers were received. This is a very small percentage of the total. The percentage of replies is low for the following reasons:

1. Due to our inability to get the exact dates when the reports were received, many of the reports were returned.

2. In some cases the school programs were received too late in the season for it to be carried out. This was due to the impossibility of getting in the teachers' names on time.

3. Upon receiving the first case no school was reported that they had received the program. It was then too late to send them the school program. Although in some cases the reports were returned, the results were not as good as they should have been. About 100 were returned because of inability to deliver.

4. In a great many cases the superintendent of schools (city) requested the teachers to report to him. He then reported for the entire town. As a result he made no statement of the names or number of teachers he was reporting for. The principals of high schools in many cases did likewise.

5. Many teachers carried out the campaign, but because the results were negative, did not make a report. Many as stated in reply to the second part of the letter.

6. In many cases the work was done by the parents of agricultural classes, especially in the high schools. None of the other classes or teachers carried on the work, hence they did not make a report.



#### X. Methods used in the schools in carrying out the school program.

1. Grade teachers after discussing the disease required their pupils to write an essay on the disease before going out to look for it.

2. After the pupils had looked for the disease, grade teachers had the pupils write their report as a letter to the U. S. Department of Agriculture, as an exercise in business letter writing.

3. Art teachers required their pupils to collect the leaves of currants and gooseberries and mount them as a lesson in art.

4. In botany classes, a period was taken to discuss the disease and then a laboratory period taken to learn currants and gooseberries as well as white pine from other plants.

5. In the agriculture, nature study, and general science classes blister rust was used to stress the importance of disease to plant culture.

6. The teachers made field trips looking for currants, gooseberries and white pines as well as inspection for blister rust. As the students accompanied the teachers, they were thus instructed in field observation and nature study.

7. In high schools the subject was presented in general assembly as an address in science and economics.

8. Often the posters were placed permanently in conspicuous places, such as depots, post offices and public bulletin boards.

9. Teachers showed the literature to lumbermen, foresters and others whom they knew were in the woods part of their time, asking them whether they had ever seen anything that resembled the pictures or whether there were white pine present in that vicinity.

#### XI. Reports received from teachers in the Blister Rust Survey.

The following letter is typical of the reports that have been received from teachers. It illustrates the spirit of cooperation that has prevailed among the teachers in carrying out the work and their estimate of the value of such work.

Couch School,  
Portland, Oregon,  
October 10, 1922.

My dear Mr. Churchill:

Pardon this hasty note, but I shall have to delay sending the enclosed specimens unless I get them off now.

The work you are doing in interesting the children in real things is splendid. It has surely aroused keen interest in these children who have half a chance. Of course, if their

1. Methods used in the schools in carrying out the school survey.

1. Grade teachers after discussing the disease required their pupils to write an essay on the disease before going out to look for it.

2. After the pupils had looked for the disease, grade teachers had the pupils write their report as a letter to the U. S. Department of Agriculture, as an exercise in business letter writing.

3. First teachers required their pupils to collect the leaves of currants and gooseberries and about them as a lesson in art.

4. In botany classes, a period was taken to discuss the disease and then a laboratory period taken to learn currants and gooseberries as well as write some from other plants.

5. In the arithmetic, nature study, and general science classes, first was made to study the importance of diseases to plant culture.

6. The teachers made field trips looking for currants, gooseberries and white pines as well as insecting for blight. As the students accompanied the teachers, they were also instructed in their observation and nature study.

7. In high schools the subject was presented in general assembly as an address in science and economics.

8. Often the posters were placed before early in connection with the school as debates, post office and public bulletin boards.

9. Teachers showed the literature to foreman, foresters and others whom they knew were in the woods part of their time, asking them whether they had ever seen anything that resembled the pictures or whether there were white pine present in that vicinity.

11. Reports received from teachers in the blight survey.

The following letter is typical of the reports that have been received from teachers. It illustrates the spirit of cooperation that has prevailed among the teachers in carrying out the work and their estimate of the value of such work.

Concord School,  
Portland, Oregon,  
October 10, 1922.

Y. Dear Mr. Overmiller:

I am sorry to hear that I shall have to delay sending the enclosed specimens unless I get them off now.

The work you are doing in interesting the children in such things is splendid. It has surely created keen interest in these children who have had a chance. Of course, it their



teachers are interested, a vast amount of valuable information about other plants and both destructive and non-harmful insects, etc. will be gained.

Everywhere about us are the means of training children to be keen observers; to draw conclusions thus developing judgment and common sense; to acquire initiative in making original research. Yet our city schools, at least, are doing little or nothing with nature work and other things that bring real things for them to study and solve.

This is why I was glad to have the children take up the pine blister rust problem. Children are so eager for nature work that I feel it a tragedy to deny them.

I did not mean to write so much.

Enclosed you will find two specimens of something else the children wish to know. What are these insects, what do they do, and will they destroy our trees? What is the remedy?

Very truly yours,

(s) Viola Ortschild.

(Original of above letter in Dept. of Education files.)

#### XII. Suggested changes in future school programs.

1. No specific time should be stated in the program for carrying it out, especially if the campaign is to be staged near the beginning of school. This program was weak in that it stated the the campaign was to be carried on during the second week of school. Most of the material was not delivered until later than this period. This was the cause for some teachers not carrying out the campaign.

2. In the case of Independent School Districts, that is in the schools of the larger cities, it seems best to handle the matter through the city superintendents instead of trying to deal with the teachers direct.

3. The letter "To the Teacher" should be more concise, shorter, and the paragraphs should be briefer.

4. As far as possible there should be but one subject upon which the teacher should report. In this campaign, it was emphasized to look for the disease and locate English black currants and planted white pine. As shown in Table I, some teachers reported on one thing, some on another so that the reports were not unifrom in the information that they contained.

5. The report form should be very simple. In filling out the form used in this campaign many teachers listed the owners of currants and gooseberries under the column for black currants so that in some cases it was not clear whether the plantings reported were black currants or other currants and gooseberries.



teachers are interested, a vast amount of valuable information about other plants and both destructive and non-destructive insects, etc. will be gained.

Why therefore about us are the means of training of these to be keen observers; to draw conclusions from developing plants; to secure initiative in solving original problems. Yet our city schools, at least, are doing little or nothing with nature work and other things that bring real things for them to study and solve.

This is why I was glad to have the children take up the line of observation problem. Children are so eager for nature work that I feel it a tragedy to deny them.

I did not seem to write so much.

Enclosed you will find two specimens of something else the children wish to know. What are these insects, what do they do, and will they destroy our trees? That is the remedy.

Very truly yours,

(1) Viola Orsini.

(Original on above letter in dept. of education files.)

#### III. Suggested changes in future school programs.

1. No specific time should be stated in the program for carrying it out, especially if the campaign is to be started at the beginning of school. This program was well in that it stated the campaign was to be carried on during the school year of school. Most of the material was not delivered until later than this period. This was the cause for some teachers not carrying out the campaign.

2. In the case of independent school districts, that is in the schools of the larger cities, it seems best to handle the matter through the city superintendent rather than at trying to deal with the teachers direct.

3. The letter to the Teacher should be a concise, matter, and the geography should be matter.

4. As far as possible there should be but one subject upon which the teacher should report. In this campaign, it was emphasized to look for the disease and locate English black currants and planted white pine. As shown in Table I, some teachers reported on one thing, some on another so that the reports were not uniform in the information that they contained.

5. The report form should be very simple. In filling out the form each in this campaign many teachers listed the names of currants and gooseberries under the column for black currants so that in some cases it was not clear whether the plants reported were black currants or other currants and

Gooseberries.

6. Smaller return envelopes should be used. These used in this campaign were so large that they were badly mutilated in the mails and some were lost.

7. The number system that has proved so efficient in time saving in this campaign should be placed upon the report form instead of on the return envelope or on both.

### XIII. Recommended follow-up work.

A strictly black currant campaign should be carried out during the spring of 1923. The following campaign is recommended.

#### BLACK CURRANT SCHOOL CAMPAIGN

##### I. Object:

A. As an educational follow-up to the fall campaign in order to inform the teachers and students and consequently the general public concerning the present status of the blister rust situation as well as the results of the school campaign last fall.

B. To secure the location of as many black currant plantings as possible.

The chief blister rust work during the summer season of 1923 in the northwestern states will be the location and eradication of all black currants. This campaign should locate many plantings of black currants in isolated places where they may be overlooked by a scout. The records will serve as a check upon the work of the scouts for next summer and enable us to determine how efficiently the scouting is being done. It will be a cheap way to locate plantings. Likewise, through this preliminary dissemination of information, the foundation will be laid in the public mind for next season's work.

C. It will keep alive the interest of the teachers and children and consequently the general public in the disease. It will make active scouts of all of the people during the spring and summer months.

##### II. Territory:

The most urgent need at present in Oregon is for the location and eradication of all black currants in the coast region. This will probably be the region of chief activity during next summer's work. Consequently it seems desirable to carry out the school campaign only in the coast counties. The counties in which the campaign should include are the following:

Clatsop	159	Washington	236	Multnomah	1,438
Columbia	102	Hood River	77	Clackamas	307
Tillamook	102	Yamhill	191	Lincoln	63
Polk	127	Marion	368	Benton	131
Linn	168	Lane	266	Douglas	212
Coos	223	Curry	23	Josephine	90
Jackson	215			Total	4,498

6. Envelope return envelopes should be used. These used in this campaign were so large that they were badly mutilated in the mails and some were lost.

7. The number system that was provided so efficient in time saving in this campaign should be placed upon the report form instead of on the return envelope or on both.

### III. Recommended follow-up work.

A statistic which should be carried out during the spring of 1933. The following campaign is recommended.

### 33000 - 1933 - 1934

#### I. Object:

A. As an educational follow-up to the fall campaign in order to inform the teachers and students and consequently the general public concerning the present status of the district situation as well as the results of the school campaign last fall.

B. To secure the location of as many black current plantings as possible.

The district plan for next year during the summer season of 1933 in the northwestern states will be the location and eradication of all black current. This campaign should focus many plantings of black current in isolated places where they may be overlooked by a scout. The reports will serve as a check upon the work of the scouts for next summer and enable us to determine how efficiently the scouting is being done. It will be a check way to locate plantings. Therefore, through this preliminary dissemination of information, the attention will be laid in the public mind for next summer's work.

C. It will keep alive the interest of the teachers and children and consequently the general public in the disease. It will have active scouts of all of the people during the spring and summer months.

#### II. Territory:

The most urgent need at present in western is for the location and eradication of all black current in the coast region. This will probably be the region of chief activity during next summer's work. Consequently it seems desirable to have the scout campaign only in the coast counties. The counties in which the campaign should include are the following:

Clatsop	180	Washington	300	Witman	1,410
Columbia	100	Lea River	77	Wichman	307
Williamson	100	Yamhill	191	Wichman	61
Boon	127	Warren	308	Warren	191
Lin	108	Wash	300	Wash	310
Coos	300	Curry	10	Wichman	50
Thompson	210			Total	2,476



4,498 is the total number of teachers in the coast counties for which we have names and addresses.

### III. Supplies:

- 4,500 white, franked envelopes 4-1/2 x 10-1/2 inches
- 4,500 envelopes, white, franked for returns 4 x 10 inches  
Addressed "Professor H. P. Barss,  
Oregon Agricultural College,  
Corvallis, Oregon."
- 4,500 Synopsis of Blister Rust (see sample copy)
- 4,500 Suggestions to teachers (see sample copy.)
- 4,500 Letters to teachers (see sample copy)
- 4,500 Report forms on paper that will take ink (see sample copy)
- 8,000 Franked post cards for follow-up work and acknowledging reports.

### IV. Procedure:

1. Date, April 16 to 20, 1923.
2. Envelopes to be addressed either at Seattle office or Corvallis.
3. Return envelopes.  
A stamp to be made and these stamped at the Seattle office or Corvallis.
4. Letters and forms to be mimeographed at Seattle office.
5. Letters will be mailed from Corvallis, Oregon, April 11, 1923.
6. Replies will be returned to Corvallis, Oregon.
7. The replies will be received and the follow-up work will be carried out by the blister rust force located at Corvallis, Oregon. One of the quarantine men can be relieved about May first to go there and take charge of this work for a short time in May if necessary.

(Note: It would be my intention to have the hand addressing and stuffing of the envelopes done during March by one of the inspectors at one of the points of inspection where the inspection work is light such as at Pendleton or Pasco. The mimeographing would be done in Seattle. The blank envelopes should be ordered from Washington office immediately.)





## COOPERATIVE BLISTER RUST CONTROL

Superintendent of Public Instruction, Oregon Agricultural College,  
Bureau of Plant Industry, U. S. Department of Agriculture.

Corvallis, Oregon,  
April 15, 1923.

To the Teacher:

The White Pine Blister Rust School Campaign carried out during the fall of 1922 was very successful. A hearty response was received from the teachers. No blister rust was found in Oregon.

Last summer's work, however, in Washington, revealed the disease as generally distributed in the coast region of Washington. It occurs just across the Columbia River from Oregon. It is established there probably beyond the point of eradication.

On our part every effort must now be made to stop the spread of the disease into the valuable timber stands of Oregon and California. Past experience with the disease has proved that the English black currant is the most potent factor in establishing and spreading the disease in a community. This currant is generally of little commercial value in a community. Therefore the experts of the United States Department of Agriculture and of the State of Oregon have decided that the most important step to take now in combating the disease is to locate all English black currants, inspect them frequently and urge their eradication in every community. This will retard the natural spread of the disease.

All state and federal as well as private agencies are cooperating in this work. The teacher and her pupils can help in a very material and inexpensive way. Again we ask for your active cooperation. Again call the attention of your students to the disease. (See enclosed synopsis of the disease.) Ask them to search for black currants at their home as well as at their neighbors' and report to you any plantings that they may find.

If you will record the information submitted by the student on the enclosed form and mail it in the enclosed, addressed envelope, you will have aided greatly in this work.

The students, of course, will also be on the lookout for the disease and report anything that is suspicious.

Thanking you for past and future cooperation in this work, I am

Very truly yours,  
H. P. Barss, Oregon Agricultural College,  
Corvallis, Oregon.

P. S. I am enclosing as a suggestion several methods which teachers have used in adapting the school campaign to their regular work with the hope that they may be helpful to you in carrying out this campaign.



## LOCATION OF ENGLISH BLACK CURRANTS

Town \_\_\_\_\_ County \_\_\_\_\_ School District No. \_\_\_\_\_ Date \_\_\_\_\_

Teacher's name \_\_\_\_\_ Address \_\_\_\_\_ No. pupils \_\_\_\_\_ Grade \_\_\_\_\_

INSTRUCTIONS: Have each student report whether he has any black currants growing at his home. He should also determine by inquiry or examination whether his neighbors possess any black currants. If uncertain whether the currants are black, send in samples of the leaves with this report. See Synopsis of Blister Rust for description of methods of identifying the black currant.

[illegible]



INSTITUTIONAL REVIEW BOARD

Dr. J. R. ...  
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Project Name: \_\_\_\_\_  
Principal Investigator: \_\_\_\_\_  
Institution: \_\_\_\_\_  
Date: \_\_\_\_\_

Abstract: \_\_\_\_\_  
Summary: \_\_\_\_\_  
Introduction: \_\_\_\_\_  
Methods: \_\_\_\_\_  
Results: \_\_\_\_\_  
Discussion: \_\_\_\_\_  
Conclusion: \_\_\_\_\_

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## SUGGESTIVE METHODS OF PRESENTING THE BLISTER RUST PROGRAM TO THE STUDENT

The following methods of adapting the Blister Rust Control School Campaign to the regular school program were used by teachers in the fall campaign. They are given as a suggestion to the busy teacher.

1. As an exercise in writing the student may be required to write a paragraph on the White Pine Blister Rust after the teacher has read the "Synopsis of Blister Rust" to them. They could then go out looking for black currant plantings and be able to explain why they were looking for them.
2. As a letter writing exercise, the student after searching for black currants may write his report in the form of a business letter addressed to the U. S. Department of Agriculture. The results in these letters could be tabulated by the teacher or the letters sent in direct as a report.
3. Botany classes may be required to collect leaves and stems of black currants as a study in buds and leaves of plants.
4. Agricultural classes and general science classes may use the subject of Blister Rust as an example for a discussion of how diseases effect the economic values of crops. Then the student could be asked to help in this particular problem by locating the black currants in his community.
5. In art study classes the teacher may have the students collect currant leaves, draw or paint them and then turn in the material to the teacher.
6. The study of pine trees and black currants as well as other currants and gooseberries can be made the basis for spring field trips.
7. Competition between divisions of a class, or different classes and of different grades over a period of a week as to which group can find the most plantings of black currants may be used effectively in this work.



The following is a summary of the information received from the Department of Agriculture, Bureau of Agricultural Economics, regarding the results of the survey conducted in 1964.

1. As the results of the survey indicate, the majority of the respondents are in the agricultural sector, and the majority of the respondents are in the agricultural sector.

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## SYNOPSIS OF BLISTER RUST

Pine attacked: This disease is one which attacks only the white (five-needed) pines. The five-needed pines in the West are the western white pine, the sugar pine, the white barked pine and the limber pine.

The disease: It is a parasitic plant that obtains all of its food from another plant. It is not an insect. It grows under the bark of the pine and thus eventually kills it. The disease spends part of its life on the pine and part on the leaves of currants and gooseberries. To complete its life growth it must go from currant to pine and back to currant. It cannot spread from pine to pine direct. It can spread from currant to currant or gooseberry to gooseberry.

Distribution of the disease in the West: The disease besides occurring in the East is quite generally distributed in British Columbia and all of the coast region of Washington from the Canadian line to the Columbia River. Scouting during the year of 1922 failed to reveal the disease in any other localities in the West. It is probably firmly established where it now exists.

Importance of the English black currant: Past experience with this disease has well established the importance of the English black currant. It is many more times susceptible to the disease, and develops the disease more rapidly and abundantly than other currants or gooseberries. Consequently it spreads the disease more rapidly and much further. New infections of blister rust are generally found centering around a planting of black currants.

What is to be done: In analyzing the foregoing situation the experts of the U. S. Department of Agriculture and of the different states have decided that an effort must be made to keep the disease where it now is by employing every means possible to hinder its natural or artificial spread. Regulations have been passed forbidding the shipment of currants, gooseberry or white pine plants, out of the infected area. The next most necessary measure to take is to locate and inspect all plantings of black currants and at the same time urge their owners to destroy them. The inspection of the plants will determine whether the disease is already present. Their eradication will delay the natural spread of the disease as well as reduce very greatly the possibility of the future establishment of the disease in that community. The general public is asked to help, can help and should help in this work.

IT COSTS LESS TO KEEP IT OUT THAN IT WILL TO COMBAT IT WHEN ONCE INTRODUCED.

How to tell the English black currant: This currant has a very distinct skunk-like odor which is evident when near the plant or is evident if a portion of a twig or leaf is slightly crushed. Other currants and gooseberries have no definite odor. Also, on the under sides of the leaves are small yellowish minute spots visible to the naked eye. These are uniformly distributed over the leaf. It is from these yellowish spots that the peculiar odor originates. Further the fruit is black.

The attacked. This disease is one which attacks only the white (live-needle) pines. The live-needle pines in the West and the western white pine, the white pine, the white cedar and the white pine.

The disease: It is a general one which attacks all of the trees from coast to coast. It is not an insect. It grows under the bark of the pine and then eventually kills it. The disease spreads from the live to the dead and from the dead to the live. It is a general one which attacks all of the trees from coast to coast. It is not an insect. It grows under the bark of the pine and then eventually kills it. The disease spreads from the live to the dead and from the dead to the live. It is a general one which attacks all of the trees from coast to coast. It is not an insect. It grows under the bark of the pine and then eventually kills it. The disease spreads from the live to the dead and from the dead to the live.

Distinction of the disease from the live: The disease is a general one which attacks all of the trees from coast to coast. It is not an insect. It grows under the bark of the pine and then eventually kills it. The disease spreads from the live to the dead and from the dead to the live. It is a general one which attacks all of the trees from coast to coast. It is not an insect. It grows under the bark of the pine and then eventually kills it. The disease spreads from the live to the dead and from the dead to the live.

Importance of the live-needle pine: The live-needle pine is a very important tree in the West. It is a general one which attacks all of the trees from coast to coast. It is not an insect. It grows under the bark of the pine and then eventually kills it. The disease spreads from the live to the dead and from the dead to the live. It is a general one which attacks all of the trees from coast to coast. It is not an insect. It grows under the bark of the pine and then eventually kills it. The disease spreads from the live to the dead and from the dead to the live.

What is to be done: In carrying out the live-needle pine, the live-needle pine is a very important tree in the West. It is a general one which attacks all of the trees from coast to coast. It is not an insect. It grows under the bark of the pine and then eventually kills it. The disease spreads from the live to the dead and from the dead to the live. It is a general one which attacks all of the trees from coast to coast. It is not an insect. It grows under the bark of the pine and then eventually kills it. The disease spreads from the live to the dead and from the dead to the live.

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## SCHOOL CAMPAIGN IN OREGON

- I. Campaign to be centered in second week after opening of school.
- II. Plans to receive the o. k. of Mr. Churchill, Chief Bureau of Plant Industry, Post Office Department.
- III. During this week the cooperation of county agents to be asked by a direct letter of instructions from head of extension division. (Exhibit 2)
- IV. Mr. Churchill to send letter to county superintendents (Exhibit 3.) County superintendents or state superintendents to take up the matter with superintendents, principals and teachers.
- V. Mr. Churchill to send letter to all teachers (Exhibit 4) and form report to be filled by teacher (Exhibit 5). Also colored circular and large poster with attached statement (Exhibit 6).
- VI. All return letters to go to Mr. Churchill.
  1. Mail to be handled by Churchill's assistant, Mr. Barton.
  2. He will record replies, and refer material to Professor Barss, and file information in systematic way for the information of the Blister Rust Office.
  3. He will make a special report on the results of the campaign at the end of the week.
  4. Requests for special information to be sent out by Professor Barss.
  5. Mr. Barton will keep accurate check of all replies and send out follow-up post cards in cases where replies have not been received in due time (1 week).
- VII. Entire program to be under the supervision of C. R. Stillinger.
- VIII. Mr. Churchill to be made collaborator of the Bureau of Plant Industry.
- IX. Supplies.
  - 7000 posters
  - 7000 mailing tubes
  - 7000 circular folders
  - 7000 large manilla envelopes, 8-1/2" x 11-1/2"
  - 7000 form letters to teachers
  - 7000 form reports for teachers
  - 8000 franked post cards for acknowledging reports and calling attention that a report has not been received
  - 1000 franked envelopes.

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Corvallis, Oregon,  
September 9, 1922.

Mr. John Jones,  
County Agent,  
Multnomah County,  
Portland, Oregon.

Dear Mr. Jones:

During the week of September 11-16 the U. S. Department of Agriculture in cooperation with Oregon State Board of Horticulture, the Oregon Agricultural College, the Extension Division, and the Public Schools will carry on through the public schools, the inspection of all currants, gooseberries and white pines for White Pine Blister Rust. Further an effort will be made to locate all black currants and planted white pine in the state.

The enclosed bulletin is self explanatory of the situation. The disease has not been found in Oregon but has been found in British Columbia and in the Puget Sound region of Washington. Due to the extent of the area to be covered, all agencies are being used to find the disease if it is present so that it may be located and eradicated before it has become established in our native forest.

During this week and afterward you will no doubt have many inquiries regarding the disease and there will be reports of the disease given to you. Please forward these reports to Professor H. P. Barss, Pathologist, Oregon Experiment Station, Corvallis, Oregon.

I am enclosing for your information the details of instructions that have been sent to each teacher. Get in touch with the county superintendent of your county as soon as possible, explain the purpose of the work to her and try to secure her cooperation in this matter. Anything you can do by personal conferences with school superintendents or teachers will aid greatly in the effectiveness of the general plan. Likewise any information that you can send regarding the location of black currant plantings or plantings of white pine or any specimens that look like the disease will be an aid that will be much appreciated.

Thanking you now for the cooperation I am sure you will give,  
I remain,

Very sincerely yours,

Head Extension Division.

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The evidence in this case is self-explanatory of the situation. The disease has not been known in Oregon but has been found in British Columbia and in the West Coast of Washington. And to the extent of the area to be covered, the evidence is being used to show the disease is in present so that it may be located and eradicated before it has become established in our native forest.

...and I have been very busy since then.

1. 1941-1942

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840. 84

negative, no forest of seed

DEPARTMENT OF EDUCATION

Salem, Oregon.

September 9, 1922.

Miss Jennie Jones,  
County Suptl, Multnomah Co.,  
Portland, Oregon.

Dear Miss Jones:

During the second week after the opening of the public schools the United States Department of Agriculture in cooperation with the Oregon State Board of Horticulture, the Oregon Agricultural Experiment Station and the State Department of Education will make a special effort through the use of the public school children to determine whether the white pine blister rust occurs in Oregon. I am enclosing for your information literature concerning the disease and the program of action asked of the teacher.

I shall appreciate it very much if you will take this matter up with each of the superintendents, principals and teachers in your county and urge them to put into effect the program of inspection and make it as thorough and effective as possible.

Thanking you now for the full cooperation that I am sure you will give, I remain,

Very truly yours,

Supt. of Public Instruction.

Cooperating with Bureau  
of Plant Industry,  
U. S. Department of Agriculture.





COOPERATIVE BLISTER RUST CONTROL

Supt. of Public Instruction,  
State Dept. of Education and  
Bureau of Plant Industry,  
U. S. Depat. of Agriculture Cooperating.

Salem, Oregon,  
September 9, 1922.

To the Teacher:

The enclosed circular is, I believe, self-explanatory. The Oregon Experiment Station and the Department of Education, in cooperation with the United States Department of Agriculture, have undertaken to utilize the aid of our public school children to locate this disease if it occurs in Oregon. Because of the vast territory to be covered in a short time it is impossible for the State and Federal agents to inspect it. Consequently you and your pupils have an opportunity to be of real service.

The effectiveness and thoroughness of this search for the White Pine Blister Rust depends upon you as a teacher. The location of all cultivated black currants and planted white pine is of especial importance. Please read the enclosed circular to your pupils, show them the pictures and describe the disease to them. Ask each pupil as he goes to and from school or about his home, to look for the disease on both cultivated and wild currants, gooseberries and white pine, and report the results of his search. Of course all are to be on the lookout for the disease in the future and report anything of possible importance regarding this matter. Have them bring in to you specimens of anything that looks like the disease. Likewise ask them to report to you all plantings of black currants or planted white pine which they may locate. If there is any doubt as to whether the currants are the black variety or the pines white pines please have the student bring in specimens which you can forward for identification. All specimens that are brought in by a student should be placed in a folded paper or preferably an envelope. On the outside of this envelope place the student's name and the location of the plants and their owner. At the end of a week send in your report on the enclosed form in the addressed envelope provided together with all specimens. The report can be mailed without postage, but if specimens are enclosed, postage is required. If desired you will be reimbursed for postage.

Through such a survey the disease may be located in a community before it has become widely distributed and consequently it can be eradicated before it reaches our native timber. Thus one of the most destructive diseases in the United States will be prevented from becoming established in Oregon and consequently thousands of dollars will be saved for the agricultural interests of the state.

Thanking you now for the cooperation I am requesting from you, I remain

Very sincerely yours,

J. A. Churchill,

Collaborator.



ANNEX A - SUMMARY OF FINDINGS

Dr. J. H. Henshaw,  
Director, U.S. Bureau of  
Plant Industry

U.S. Dept. of Agriculture,  
Washington, D.C.  
June 10, 1914

To the Director:

The following information is being submitted to you for the Bureau of Plant Industry, U.S. Department of Agriculture, in connection with the investigation of the cause of the disease of the cotton plant in the State of Texas. It is hoped that the information will be of some value to you in your work.

The following information is being submitted to you for the Bureau of Plant Industry, U.S. Department of Agriculture, in connection with the investigation of the cause of the disease of the cotton plant in the State of Texas. It is hoped that the information will be of some value to you in your work.

Through the Bureau of Plant Industry, U.S. Department of Agriculture, it has been found that the disease of the cotton plant in the State of Texas is caused by a fungus which is known as *Ascochyta blight*. This fungus is one of the most destructive diseases of the cotton plant and it is hoped that the information will be of some value to you in your work.

Thanking you for the cooperation in the investigation of the disease of the cotton plant in the State of Texas, I am, Sir, very respectfully,  
Very sincerely yours,  
J. H. Henshaw

J. H. Henshaw

Director, U.S. Bureau of  
Plant Industry

STATE DEPARTMENT OF EDUCATION  
AND  
BUREAU OF PLANT INDUSTRY,  
U. S. DEPARTMENT OF AGRICULTURE,  
COOPERATING

THIS REPORT IS TO BE SUBMITTED AT THE END OF THE SECOND WEEK OF YOUR SCHOOL. A REPORT IS TO BE MADE UNDER ANY AND ALL CIRCUMSTANCES.

Town \_\_\_\_\_ County \_\_\_\_\_ School District No. \_\_\_\_\_ Name of School \_\_\_\_\_ Grade \_\_\_\_\_

Teacher's name ----- Address -----  
No. pupils participating ----- Date -----

**INSTRUCTIONS:** As far as possible get the location from the students of all cultivated English Black currants and planted white pine. Submit specimens of everything that looks like the disease. Include specimens in an envelope or paper bearing name of student, location of plants and name and address of owner.

[illegible]

[illegible]

HOW THE SCHOOL CHILDREN OF OREGON CAN HELP TO  
GUARD OREGON'S FORESTS AGAINST THE WHITE PINE BLISTER RUST

Oregon has \$27,000,000 worth of western white pine and sugar pine which must be guarded against the invasion of this destructive Blister Rust.

This disease has already appeared in southwestern British Columbia and the northern portion of the Puget Sound region of Washington.

It is not known to occur as yet in Oregon but for the safety of our forests a careful search for the disease must be made in all parts of the state so that if it does occur in Oregon it may be discovered and wiped out before it has become established beyond eradication.

The boys and girls can act as detectives to find the disease if it should be present. If the disease is found the State Board of Horticulture and the National Government will then take steps to get rid of it immediately. Study the government folder and the pictures until you know all about the disease and what it looks like. Then go out and hunt for signs of the rust disease especially on black currants and send all suspicious specimens to:

Plant Pathologist,  
Oregon Experiment Station,  
Corvallis, Oregon.







(First circular letter to county superintendents requesting lists.)

Salem, Oregon,  
August 30, 1922.

TO THE COUNTY SUPERINTENDENTS:

The government is now engaged in a campaign for controlling the White Pine Blister Rust, one of the most destructive diseases in the United States, causing the loss of thousands of dollars, annually, to the agricultural interests of the states; it is proposed to utilize the aid of the public school children to assist in locating the disease as it now occurs in Oregon. It is proposed, therefore, to send to each teacher in Oregon literature from the government that will familiarize the teacher, and all of the pupils in a district, with the destructive disease so that a federal agent may locate the area affected and take steps to ruthlessly stamp it out.

Won't you, at your very earliest convenience, send to me a list of the teachers who are to teach in your county next year? I know that many of the districts have not yet employed their teachers, and that the list which you send to me must, necessarily, be incomplete.

You may eliminate the teachers in your district of the first class, if there be one in your county, since I shall attempt to gather this information from the city superintendents.

As the teachers' contracts are filed in your office from time to time, please send the name of the teacher and her address to this office so that we may, at once, send her the literature.

When this matter was presented to me by the government, I suggested that action be delayed until after the schools had opened in the fall. However, the nature of the disease is such that the best time to detect its presence is during the month of September, or at least early in October.

Since we shall need to reach something like seven thousand teachers in the state, it will be necessary for us to begin sending out the literature at once.

Again requesting that you send me such a list as you can of the teachers who will teach in your county this fall, together with the address of each teacher, and thanking you in advance for your cooperation, I remain

Very sincerely yours,

Superintendent of Public Instruction.

(The following is a list of the names of the persons who have been named in the above mentioned letter.)

John, George,  
William, etc.

TO THE HONORABLE MEMBERS OF THE HOUSE OF COMMONS

The Government has the honor to acknowledge the receipt of your letter of the 14th inst., and of the more extensive copies of the same, and to inform you that the same have been forwarded to the proper authorities for their consideration. It is, however, to be regretted that the same have not yet been decided upon, and that the Government is unable to give you any definite answer at this time. It is, however, to be hoped that the Government will be able to give you a more definite answer in the near future.

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Very respectfully,  
The Secretary of State

Enclosed is a copy of the letter of the 14th inst.

(First letter to city superintendents of independent school districts,  
enclosing a copy of the letter  
"To the County Superintendent" dated August 30.)

Salem, Oregon,  
August 29, 1922.

TO THE CITY SUPERINTENDENT:

I am sending, enclosed, a copy of a letter which I  
have just written to the county superintendents. This will ex-  
plain the need for immediate action, and I trust that I may re-  
ceive from you your list of teachers at your very earliest conven-  
ience.

Very sincerely yours,

J. A. Churchill,

Superintendent of Public Instruction.

d. 1000

1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific requirements of the task.

1979. and in 1980 = 4120000

(6) கனம் உறுப்பினர்: "தொழில்நுட்பப் பிழைப்பு என்ன?"

• 1970, 1971, 1972

: 2016-11-17 14:10:22

1. I have a letter to you from the Secretary of the State Department.

• 971251

2007-10-08

11105000

no it arrived on 10th in the morning 3 p.m.

(Second letter to county superintendents requesting lists.)

Salem, Oregon,  
September 12, 1922.

Mr. C. E. Mulkey,  
County Supt., Coos County,  
Marshfield, Oregon.

My dear Mr. Mulkey:

Reference is made to my letter of August 30, requesting a list and addresses of the teachers under your supervision, and asking your cooperation in preventing the spread of the White Pine Blister Rust in our state.

I have not yet heard from you and as it is very important that the work be undertaken without further delay may I not urge upon you the necessity of sending in this list at once. If this is not complete I would be glad to have the names of those teachers already filed, the other names could be sent in later.

Thanking you for your early attention to this matter, I remain,

Very truly yours,

J. A. Churchill,

Superintendent of Public Instruction.



(Second letter to committee regarding the matter.)

October 11, 1911.

Mr. C. A. Smith,  
County Clerk,  
Washington, D. C.

Dear Sir:

I have the honor to acknowledge the receipt of your letter of the 10th inst.

in relation to the proposed amendment to the laws of the District of Columbia.

and in reply to inform you that the same has been referred to the

Committee on the Judiciary for their consideration.

I have not yet received from the committee any report on the matter.

and the same will be submitted to the committee at the next meeting.

I am, Sir, very respectfully,  
Yours,  
J. A. Smith.

It is not complete I would be glad to have the name of the person

who has been killed, and other facts which would be of service.

Very truly yours,  
J. A. Smith.

cc: Mr. Smith

Very truly yours,

J. A. Smith.

Respectfully,  
J. A. Smith.

(Second letter sent to city superintendents of independent school districts requesting lists of teachers.)

Salem, Oregon, September 22, 1922.

Mr. W. C. Alderson,  
Superintendent of Schools,  
Portland, Oregon.

My dear Mr. Alderson:

Reference is made to my letter of August 30 requesting a list and addresses of the teachers under your supervision, and asking your co-operation in preventing the spread of the White Pine Blister Rust in our state.

To date I have not heard from you. As the time is growing short in which to obtain the best results may I not urge upon you the necessity of sending in your list without further delay? If it is not complete I would be glad to have what there is of it and the remainder may be sent later. We want these names so that we may send literature, identifying the disease, to the teachers in order that they may explain the situation to the school children.

Trusting that you will give this matter your immediate attention, I remain,

Very truly yours,

J. A. Churchill, Superintendent  
of Public Instruction.

Exhibit 11.

(Wire sent to county superintendents who had sent in no list or only partial lists.)

Salem, Oregon, September 22, 1922.

Mrs. Gertrude H. Parker,  
Baker, Oregon.

United States Department of Agriculture considers Blister Rust Campaign of utmost importance and anxious to reach every teacher in state (stop) To save delay in reaching teachers whose names have not been received, will you address literature, bearing government frank and ready for mailing, if forwarded to you (stop) Wire collect immediately.

J. A. Churchill,

Superintendent Public Instruction.

1920-1921  
1921-1922  
1922-1923

1. The first part of the paper is devoted to the study of the properties of the function  $f(x)$  defined by the equation

1260

• Diffusion is the movement of particles from an area of high concentration to an area of low concentration.

[illegible]

THE UNIVERSITY OF CHICAGO

(Third notice sent requesting lists of teachers from  
county superintendents. Wire, night message.)

Salem, Oregon,  
September 22, 1922.

O. C. Brown, County School Supt.,  
Roseburg, Oregon.

Government Department of Agriculture anxious to have your  
list of teachers immediately as the best time for fighting  
Pine Blister Rust is this month (stop) Please send your list  
of teachers with their school addresses that we may send them  
descriptive literature identifying disease (stop) Promptness  
in complying of utmost importance to state and national forests.

J. A. Churchill,

Superintendent of Public Instruction.

Exhibit 1

(This notice is being sent to you from

county superintendent. Time, night session.)

October 11, 1931.  
Dear Sir:

U. S. Bureau, County Superintendent,  
Chicago, Illinois.

Government Department of Education wishes to have your

list of teachers immediately to the best of your ability

the list is this (note) please send your list

of teachers with their school address to the best of your

descriptive literature (note) please send your list

in compiling an about importance to state and national states.

Sincerely,  
J. L. Sullivan.

Superintendent of Public Instruction.



Salem, Oregon.

Splendid cooperation is being given on White Pine Blister Rust campaign. Although diseased leaves of currants or gooseberries are not always found, the location of white pines and black currants is being reported, which information will be valuable in controlling the disease in the future.

Owing to the great danger of the Blister Rust to our forests, the United States Department of Agriculture would like the help of every teacher in the state. As yet our records show no report received from you. Will you not cooperate by sending in immediately a report for your school, with the information requested.

Very truly yours,

J. A. Churchill,

Supt. of Public Instruction,

Collaborator, U. S. Dept. of Agriculture.



Salem, Oregon.

As yet no report has been received from you on the White Pine Blister Rust campaign. I cannot emphasize too strongly the importance of this work. The schools are the recipient of large sums annually from the sale of government timber and to save this from destruction is working for our own best interests. If the survey as requested has not been made, will you have your pupils do so and send in the report immediately.

Very truly yours,

J. A. Churchill,

Supt. of Public Instruction.

Collaborator, U. S. Dept. of Agriculture.

London, Ontario

As yet no report has been received from you on the White Pine  
Alister Hunt campaign. I could emphasize too strongly the im-  
portance of this work. The report and the receipt of large  
sums annually from the sale of Government timber and to a ve-  
lue this from destination is working for our own best interests. If  
the survey as requested has not been made, will you have it  
made do so and send in the report immediately.

Very truly yours,

J. A. Macdonald,

Dept. of Public Instruction.

Collaborator, C. C. West, in Agriculture.

(Letter sent to principals of high schools urging their cooperation when no reports had been received from any of his teachers.)

Salem, Oregon,  
October 11, 1922.

Mr. S. F. Ball,  
Principal, Franklin High School,  
Portland, Oregon.

My dear Mr. Ball:

There has been mailed from this office to all teachers in the state, literature descriptive of the White Pine Blister Rust and the critical situation in the outbreak of the disease in the Northwest which threatens our valuable forests of sugar and white pine. May I not ask your cooperation in the campaign which is under way and which is very pertinent to our interests?

Our schools have been the beneficiaries in taxes levied on private timber, in the sale of timber on Government Forest Reserves and the building up of the irreducible school fund from the sale of state lands, much of which is forested. The interest of our schools clearly lies in the protection of these resources.

I have asked the cooperation of every teacher in having their pupils make a survey and reporting any currants or gooseberries bearing the infection and the location of English black currants, and white pine planted for ornamental purposes.

The object of the campaign is to locate any infection and the gathering of data which will help to control the disease in the future, if not found now.

I realize the more complex situation of conducting such a campaign in the high school, where the pupils are not under the supervision of any one teacher. In some of the smaller towns we have had excellent results conducted by the classes in biology and botany. On account of the size of Portland, however, and the likelihood of its harboring the disease, it seems necessary to enlist the help of the entire student body if possible and I am asking your cooperation with this in view.

For any results which we may get I can assure you not only of my appreciation but that of the private timber owner, the State and the United States Government.

Very truly yours,

J. A. Churchill,

Supt., Public Instruction.



Michael J.

(letter sent to principals of high schools urging their cooperation  
When no reports had been received from any of his teachers.)

Bellevue, Oregon,  
October 11, 1922.

Mr. J. T. Bell,  
Principal, Franklin High School,  
Portland, Oregon.

My dear Mr. Bell:

There has been mailed from this office to all teachers in the  
state, literature descriptive of the white pine blister rust and the  
critical situation in the outbreak of the disease in the Northwest which  
threatens our valuable forests of sugar and white pine. May I not ask your  
cooperation in the campaign which is under way and which is very pertinent  
to our interests?

Our schools have been the beneficiaries in taxes levied on private  
land, in the sale of timber on Government Forest Reserves and the build-  
ing up of the irremediable school fund from the sale of state lands, much of  
which is forested. The interest of our schools clearly lies in the protection  
of these resources.

I have asked the cooperation of every teacher in having their  
pupils make a survey and reporting any currents or gooseberries bearing the  
infection and the location of infection of any currents, and white pine planted  
for ornamental purposes.

The object of the campaign is to locate any infection and the  
gathering of data which will help to control the disease in the future, if  
not found now.

I realize the more complex situation of conducting such a campaign  
in the high school, where the pupils are not under the supervision of any  
one teacher. In some of the smaller towns we have had excellent results  
conducted by two classes in biology and botany. On account of the size of  
Portland, however, and the likelihood of its harboring the disease, it seems  
necessary to enlist the help of the entire student body if possible and I  
am asking your cooperation with this in view.

For any results which we may get I can assure you not only of my  
appreciation but that of the private timber owner, the State and the United  
States Government.

Very truly yours,

L. A. Chittenden,

Asst. Public Infection.

#### 4. Scouting in California.

Federal Blister Rust Work in California was carried on in accordance with the following memorandum.

MEMORANDUM OF UNDERSTANDING BETWEEN THE CALIFORNIA STATE DEPARTMENT OF AGRICULTURE AND THE BUREAU OF PLANT INDUSTRY, UNITED STATES DEPARTMENT OF AGRICULTURE, RELATIVE TO COOPERATIVE WORK ON THE SCOUTING FOR POSSIBLE WHITE PINE BLISTER RUST INFECTION IN CALIFORNIA.

Effective June 15, 1922 to March 31, 1923.

The object of this memorandum of understanding shall be to facilitate the prompt location and eradication or effective control of white pine blister rust in California, in view of the threatened destruction of private, state, and nationally owned timber throughout the West as a result of the presence of this disease in British Columbia and Washington, and the danger of its further spread by natural dissemination or quarantine violations.

It is agreed that the California State Department of Agriculture and the Bureau of Plant Industry shall cooperate to the above ends in accordance with the following plans:

1. The Bureau of Plant Industry shall pay the salaries and expenses of one or more men who shall perform necessary scouting for the disease in California under the direction and supervision of the Director, California State Department of Agriculture. The California State Department of Agriculture shall deputize these scouts to enable them to enter and inspect any property but not to destroy plants. The California State Department of Agriculture shall furnish desk room for the man in charge of the Federal work in California, and the typewriter services as may be necessary.
2. In view of the fact that the California State Department of Agriculture has no special appropriation for blister rust control, it is understood that when this disease appears in California the California State Department of Agriculture agrees to immediately make every effort to secure funds for its eradication from sources available to it, and in the event of failure to secure necessary funds for this purpose, the California State Department of Agriculture shall deputize the employees of the Bureau of Plant Industry working in California, empowering them to destroy blister rust host plants infected or potentially infected with this disease.
3. The California State Department of Agriculture and the Bureau of Plant Industry shall cooperate in the strict enforcement of state and federal blister rust quarantines now in effect or which may be promulgated.



4. The California State Department of Agriculture and its co-operators shall use their regular employces, so far as their other duties permit, in systematically locating cultivated black currants and infected or potentially infected blister rust host plants; in scouting for the blister rust; inspecting nurseries for this disease and in enforcing state and federal blister rust quarantines. Such work will aggregate approximately 4400 man days, representing a total expenditure on the part of the California State Department of Agriculture and its co-operators of about \$44,000 for the control of this disease. The expenditures of the Bureau of Plant Industry indicated in previous paragraphs will aggregate approximately \$2,880, but none of the Federal funds shall be spent in compensation for plants destroyed in control work.

5. All official records showing work performed under this agreement shall be open to inspection of the California State Department of Agriculture or the Bureau of Plant Industry on request. All findings of the blister rust made by either the California State Department of Agriculture and its co-operators, or the Bureau of Plant Industry, shall be promptly reported to the other party. All specimens collected or received by the California State Department of Agriculture and its co-operators, which are suspected to be infected with blister rust shall be submitted to the Bureau of Plant Industry for critical determination. The Bureau of Plant Industry shall give such technical information to the employees of the State Department of Agriculture and its co-operators as will enable them to recognize the several stages of the disease.

6. It is understood that the Bureau of Plant Industry shall be primarily responsible for scouting and location of the blister rust in California and for technical information on its control, but that the Federal Government has no authority to destroy private or state property and therefore the California State Department of Agriculture shall be wholly responsible for the destruction of such pine, currant and gooseberry plants as may be found necessary in order to control the spread of this disease in California, including plants shipped in violation of state and federal blister rust quarantine regulations.

7. This memorandum of understanding shall take effect June 15, 1922, and continue in force until March 31, 1923, or until previously terminated by mutual consent of the parties concerned.

SIGNATURES:

Date June 15, 1922

Geo. Hecke  
Director, California State  
Department of Agriculture.

W. A. Taylor  
Chief, Bureau of Plant In-  
dustry, U. S. Dept., of  
Agriculture.





REPORT ON THE WORK DONE IN CALIFORNIA IN THE  
WHITE PINE BLISTER RUST CAMPAIGN

By A. O. Garrett

ORGANIZATION: I arrived in Sacramento, California, on June 27 to take charge of the work. Mr. S. N. Wyckoff met me at the Travellers' Hotel by appointment early in the afternoon of the same day, and outlined the work for the season as planned to that date. As to the organization of the work, I was to work under the supervision of Mr. Lee A. Strong, Chief, Bureau of Plant Quarantine, California State Department of Agriculture, and was to have office space in the State Department of Agriculture. I was to have two scouts, who were then being given their training in Washington and Oregon, as soon as I was ready for them. In addition, I was to have a stenographer. A co-operative agreement had been planned, the details of which we discussed. (Given in full as Supplement 1 attached to this report.) Since the California State Department of Agriculture was to move the first of the month into a new building, nothing could be done until after the moving had taken place toward regular office work; but we discussed plans to put our organization into effect without delay as soon as I could become established in my office. During the days following preceding the time the State Department was in its new building, we held conferences with Dr. Meinecke, at San Francisco, Professor Crocheron at Berkeley, Mr. Lee A. Strong at Sacramento, and others who would be more or less connected with the blister rust campaign of California as planned.

The request for authority to employ a stenographer was taken up with the Civil Service Office at San Francisco; permission to rent a typewriter was asked for and various other minor details were looked after.

The moving into the new building was practically completed July 4, and I was given desk-room in the office of Mr. Fleury next to the office of Mr. Strong. On July 5 I began the actual office work. Miss Violet Trousé had been employed as my stenographer.

CONFERENCES: On the following afternoon, a conference took place in Director Hecke's office of those who had been invited to co-operate in the Blister Rust campaign. Mr. Hecke presided, and the following were present: Director Hecke, California State Department of Agriculture; Mr. Lee A. Strong, Chief, Bureau of Plant Quarantine, State Department of Agriculture, and other representatives of the State Department of Agriculture; Dr. Meinecke, District Pathologist of the U. S. Office of Forest Pathology; Mr. Woodbury, representing the Forest Service; Professor T. Francis Hunt, representing Professor Crocheron, Director of the California Agricultural Extension Service and the Farm Advisors; Mr. H. B. Pratt, State Forester, representing the California State Board of Forestry; Mr. Wyckoff and myself, representing the Office of Blister Rust Control, U. S. Bureau of Plant Industry. In fact, all of the parties to the tentative co-operative agreement for Blister Rust work in California were present with the exception of Mr. C. Stowell Smith, representing the California White and Sugar Pine Manufacturers' Association and Mr. H. J. Ryan, President of the California County Horticultural Commissioners, who were unable to be present on account of other engagements.



This conference discussed the tentative plans for work in California during the season as outlined in Supplement 1 attached. (A copy of this tentative arrangement was given to each of those present.)

Dr. Meinecke stated that since *Ribes nigrum* is the most congenial host for white pine blister rust, the best plan would be to limit the scouting to this host, and suggested that this could best be done by making use of the *Cronartium ribicola* cards for California already on file; to scout all the *Ribes nigrum* and 5-leaf pines reported on those cards, and also to make as many new records of the occurrence of *Ribes nigrum* and 5-leaf pines in the State as possible. He further stated that he would not advise at this time any steps towards eradication, for if the rust came to California by natural spread from Washington it would be ten years or more before the rust could reach the California border, and that the growers of *Ribes nigrum* might well have the use of the plants until that time. In regard to the relations of the several groups of co-operating agencies, he suggested that the County Horticultural Commissioners and the Farm Advisors scout in the towns and on the farms, (which would be for the most part in the lowlands) that the State Rangers (State Fire Wardens) take the territory at middle elevations extending upwards from the upper limit of the range of the County Commissioners and the Farm Advisors, and that the U. S. Forest Service's field force begin where the State rangers leave off, and continue upward to the timber line. He stated that the Forest Service had about all of their time taken up with their regular work, and too much should not be outlined for them. Dr. Meinecke also emphasized the value of scouting a certain area very thoroughly, rather than superficial scouting over the entire State.

If the above plan was carried out, this would leave the government scouts to work wherever there seemed to be the most need for their services.

Mr. Pratt, State Forester, promised all of the co-operation possible from his men, but intimated that considerable educational work would probably be necessary.

Professor T. Francis Hunt, speaking for the Farm Advisors, said that all of their work was done by projects, and that the projects for this year had already been assigned. That the matter of any assistance from these men could be taken up next January when the projects for the coming year would be decided on. He thought, however, that the work of the Farm Advisors should be strictly educational, leaving the actual work of inspection to the County Horticultural Commissioners.

Mr. Woodbury reiterated what Dr. Meinecke had said about the already full program of the field force of the U. S. Forest Service; but said that the Forest Service would give whatever assistance was possible under the circumstances. He said that the Forest assistants could carry on a campaign of education in regard to blister rust in their respective localities.

Mr. Strong stated that he was sure we could count on the County Horticultural Commissioners to help in every way possible. He called attention to the amount of work in the aggregate that could be done if each of a large number of men would give a few days to the blister rust work.



Mr. Wyckoff, in referring to the educational work of the Farm Advisors as referred to on page 3 of Supplement 1 herewith attached, said that the Office of Blister Rust Control would furnish each Farm Advisor with a set of lantern slides illustrative of blister rust to be used in the illustrative talk referred to in said supplement. He also said that a specimen of the rust on Ribes in the form of a Riker mount could be sent to each County Horticultural Commissioner and Farm Advisor, so that the owners of Ribes nigrum plants could see just exactly what the rust looked like.

This conference adjourned without anything very definite being settled subject to the call of Mr. Strong for its continuance.

On the seventeenth of July, Mr. Strong presided at the second conference, called to meet in Mr. Fleury's office in San Francisco. Present: Mr. Lee A. Strong, Chief, Bureau of Plant Quarantine, California State Dept., of Agriculture; Mr. H. J. Ryan, Pres., of County Horticultural Commissioners of California; Prof. T. Francis Hunt, representing the California Agricultural Extension Service and the Farm Advisors; Mr. Fleury, Quarantine Office, California State Dept., of Agriculture; Mr. C. Stowell Smith, Sec.-Mgr. of the California White and Sugar Pine Manufacturers' Association; Mr. Rhodes; and myself, representing the Office of Blister Rust Control, U. S. Bureau of Plant Industry.

At this conference, Professor T. Francis Hunt reiterated his statement made at the previous conference that whatever work was done by the Farm Advisors should be purely educational; that they had no police powers; that their projects had already been assigned for the year, and they really had scarcely any time that could be given to blister rust work; but that in those counties where there was no County Commissioner, or where the County Commissioner found that he was unable to do the work, then the Farm Advisor might be asked to carry on the work of education. However, all requests for the assistance of the Farm Advisors, and in fact, all dealings with them, must come through Professor Crocheron's office. Professor Hunt presented a map showing a districting of the State for this work.

Mr. C. Stowell Smith stated that the timber organizations of the State were not very enthusiastic in regard to the blister rust prevention; that they could not be made to see wherein it especially affected their interests; that blister rust did not affect trees of the size used by the California lumbermen; that furthermore, the men who composed his association were really entirely commercial in their interests, and had no interest in any trees that might be available to future generations - their interests lay entirely in the timber now ready for the saw. He further stated that he had asked for information relative to the largest trees ever affected by blister rust, but so far had failed to obtain it.

Mr. Rhodes agreed with the points brought out in the discussion of Mr. Smith.

Mr. Ryan assured the conference that the County Horticultural Commissioners could be relied on to do everything in their power.

This conference adjourned without accomplishing anything further.





It seemed to indicate however that there was a diversity of opinion that would be detrimental to effective work; and that whatever results were to be obtained would be from the efforts of the State Department of Agriculture, the County Horticultural Commissioners, the State Forest Rangers, and the federal forces.

I have reported these conferences in great detail in order that any lesson derived from them might be applied to the 1925 campaign.

**NURSERIES OF CALIFORNIA:** Immediately on our return to Sacramento, Mr. Strong, and I planned to get out a letter to all the nurseries of California, inquiring as to what stocks of five-leaf pine and of *Ribes nigrum* they had on hand. There are over eleven hundred registered nurseries in California, many of which handle only citrus or other nursery stock of a special character. It was thought, however, that a good deal of valuable information could be obtained from the replies to these letters; and that either the County Commissioners or the government scouts could make inspection of all nurseries which reported the presence of *Ribes* or five-leaf pines or both, as well as those which failed to report. On account of delay in getting letterheads for the circular letter to the nurserymen and post-cards for their reply (I received these July 17 direct from Washington) the letters were not mailed until July 29. (I mailed them the same day I got the circulars from the printer.) This delay resulted in a curtailment of the time required for as thorough work as we had desired. It was necessary for Mr. Strong to send out another letter later requesting those who had not replied to do so.) With a few exceptions, the only inspections made of the five-leaf pines and of the *Ribes nigrum* reported on these cards were made by County Horticultural Commissioners. Of the eleven hundred letters sent out, replies were received from six hundred seven nurseries. (Some letters were returned, the addressees having gone out of business, and moved away.) Of this number, seventeen reported having on hand black currants and twenty had one or more varieties of five-leaf pine. The number of black currants reported was 7605, and the number of five-leaf pines about fifty. It was my intention to send to the County Commissioner in each county a list of nurseries not reporting, and also those reporting *Ribes nigrum* or five-leaf pines or both, with a request for him carefully to inspect same, but this was possible only in a few cases. While the lists were sent out, there was not time enough for the inspections to be made.

**SCOUTING AND INSPECTION WORK:** According to Dr. Meinecke's suggestion, the California *Cronartium ribicola* cards, prepared in previous blister rust campaigns in California, were made the basis of the work. The card, however, contained data that in one respect proved disappointing, since only about thirty-three per cent of the plantings recorded thereon proved to be still alive. However, this point must not be lost sight of: If *Ribes nigrum* was the original host of an introduction of blister rust, it is possible that before the *Ribes nigrum* plants died, the rust could have infected native *Ribes*, and thereby perpetuated itself in a dangerous way (from the standpoint of its being located).

As soon as the cards were received, a list was prepared for each county showing just what black currants and five-leaf pines and *Ribes* the variety of which was not specified were recorded for each county. (There are recorded on the *Cronartium ribicola* cards 775 plantings of black currants, 141 plantings of currants the variety of which is not specified, and 235



plantings of five-leaf pines.) These lists were mailed to the respective County Commissioners. In two cases where there are no County Commissioners, I sent one of the scouts to check up on the plantings. The result of the scouting by the County Commissioners and the government scouts is as follows: Pines recorded on cards originally, 15, of which 2 were dead and thirteen inspected. Ribes nigrum as originally recorded on cards, 252, of which 190 were dead and 58 alive and healthy (at least entirely free from Cronartium ribicola.) Added to this record, however, we have six new locations with 52 pines and 15 new locations with 252 plants of Ribes nigrum reported by State workers, and 22 new locations with 930 pines and 35 new locations with 9567 black currants reported by government workers. This method of stating results is, however, far from accurate; for in many cases one of the scouts would be given the information which led to the reporting of the planting by one of the State men. Much time also was spent definitely placing the cases of "Ribes, variety not specified". About thirty of these were finally disposed of.

As stated above, this work was done by the County Horticultural Commissioners, Mr. Parker, Mr. Duncan and myself. Mr. Parker and Mr. Duncan arrived July 23, and began work the following morning. I append hereto as Supplement 2 and Supplement 3 the reports of Mr. Parker and Mr. Duncan of their scouting and inspection work in California. Working on the hypothesis that if blister rust came to California by natural spread it would be more likely to be found in the northern counties or along the coast, our attention was given for the most part to those sections. Altogether work was done in thirty-eight counties of the State.

I made one trip to Lassen and Modoc Counties, another Lakeside, Lake Tahoe, Placer County, and a third to San Diego, Orange, Los Angeles, Ventura, and Santa Barbara Counties. I had hoped to do more field work, but delays on account of non-arrival of necessary supplies, etc. made me feel that I should be at the office the very minute these supplies should arrive, so that the work we were undertaking could be pushed forward as expeditiously as possible.

**EDUCATIONAL:** In carrying out the work of education in the State, it was my intention to carry the message of blister rust to every State Ranger (Fire Warden) and every County Horticultural Commissioner of California, and as many of the U. S. Forest Service field men and the employees of the forest lumber camps, by a personal visit from Mr. Parker, Mr. Duncan or myself. It was possible to see thirteen of the twenty-five State Rangers, and the County Commissioners of Alameda, Colusa, Contra Costa, Fresno, Glenn, Humboldt, Kern, Lake, Lassen, Los Angeles, Madera, Marin, Mendocino, Merced, Modoc, Monterey, Napa, Nevada, Orange, Placer, Riverside, Sacramento, San Benito, San Bernardino, San Diego, San Joaquin, San Mateo, Santa Clara, Santa Cruz, Shasta, Siskiyou, Sonoma, Stanislaus, Sutter, (Trinity), Tulare, Ventura, Yolo, and Yuba Counties. (In some cases, visits, were made to other counties where scouting was done, but where the County Commissioner was missed on account of being out of town. Also, the State Rangers were sometimes out on fire duty and the time was too limited to wait for their return.)

On many of these visits, the scouts went with either the County Commissioner or the State Ranger for a trip into the field, examined all of the cultivated Ribes nigrum of which any information could be obtained, and





also noticed and inspected what wild Ribes were in the vicinity.

In addition to the above, many of the U. S. Forest Service employees were seen, and some of the employees of the lumber camps.

I am thoroughly convinced that these personal visits gave the persons interviewed not only a far better conception of blister rust - its appearance, occurrence, and danger - but also stimulated them into a new interest in their work. All of the reports I had both from the men interviewed and from other sources indicated this to be the case. I consider these visits from the educational standpoint alone very much worth while. Again, in all cases all three of us were treated with the acme of courtesy.

Besides the work of education referred to above, a number of the Commissioners had articles on blister rust printed in their county papers. These County Commissioners, by the way, are men of a very high type, and naturally have much influence in their localities; and I give the highest value to these articles. It is likely that such an article, signed by a man whom they knew and respected, would have more weight in a given community and would excite more interest than an article on the same subject prepared by someone whom the citizens of that particular community did not know.

At the suggestion of Mr. Reynolds, editor of the California State Department of Agriculture, I prepared an article on blister rust written in a popular style which Mr. Reynolds had printed in the Country Life section of the "Sacramento Bee", the Out-o-doors section of the "Stockton Record", and in the September number of the "Western Florist, Nurseryman and Seedsman". I distributed to all of the County Commissioners a circular letter giving a list of the scientific and common names of the various five-leaf pines in cultivation, and of the native five-leaf pines of California together with the distribution in California of the latter as given in Sudworth's "Forest Trees of the Pacific Slope"; and also a list of the various common or horticultural names given to Ribes nigrum.

In addition to the above, I also distributed to the County Commissioners and the State Rangers (Fire Wardens) during the season one or more copies each of Farmers' Bulletin 742 and the new Blister Rust Circular. To each County Commissioner was sent from the Seattle office a Riker mount of Cronartium ribicola in the uredinial stage on Ribes nigrum. The Seattle office also sent to County Commissioner and State Ranger a blister rust poster. Seventy-five of these posters were also sent to Mr. C. Stowell Smith for the principal lumber camps of the State. The U. S. Forest Service undertook to send out posters, circulars and bulletins directly to its employees.

Dr. Meinecke prepared an article on blister rust which was sent by the U. S. Forest Service to all of the forest field force of the U. S. Forest Service, and at his request I prepared an article entitled "The Sugar Pine, and White Pine Blister Rust", which was sent out to them, through the U. S. Forest Service office at San Francisco, as a follow-up article. This same article, by the way, was sent to all of the County Commissioners, the State Rangers and seventy-five copies to C. Stowell Smith, which he distributed to the different companies of his association.

At our first conference, Dr. Meinecke suggested that I prepare mounts of a black current leaf and of a five-leaf pine twig to send to each



of the County Commissioners, the State Rangers, and also to send seventy-five to Mr. C. Stowell Smith for him to forward to the different lumber companies in his association. Acting on this suggestion I prepared the mounts and sent them to the person indicated above. Unfortunately, however, Mr. C. Stowell Smith sent them out to the different camps as examples of diseased specimens of black currants and five-leaf pines. How this error occurred, I cannot guess; for I distinctly stated in the letter of transmissal, that I was sending healthy specimens of pines and black currants, so that their men could recognize just what was meant by these terms. "black currant and five-leaf pines". In a letter written to Mr. Strong, under date of July 7, Dr. Meinecke says, "In line with out plan of yesterday, I told Mr. Smith that what we want at this time is to carry the black currant and 5-leaf pine census as near to completion as can be done with means at hand as a preparatory measure against a possible contingency of eradication work in the future. \*\*\*\*\* Mr. Smith was particularly taken with the plan to have Mr. Garrett send out a pressed specimen of a black currant twig together with a 5-needle pine spray. He hopes that all men in his organization may be furnished with a set". He may possibly have had in mind during this conversation diseased specimens while Dr. Meinecke was thinking of healthy specimens. I do not know, but I consider the error unfortunate. As soon as I learned of it, I called on Mr. Smith, but found him out of the city. However, I explained the matter to Mr. Smith's assistant, who promised to have a letter sent out immediately to correct the error.

A number of the Commissioners gave talks in their respective counties on blister rust, and in several instances Mr. Parker and Mr. Duncan also talked on the subject. More of the County Commissioners would have given these talks, but probably postponed the time, awaiting the arrival of the set of illustrative lantern slides promised us by the first of August. These were not ready for us even by the close of the season, thereby proving a great handicap to the success of this phase of the educational work of the season. Without doubt, they can be made good use of next season.

**SUSPICIOUS MATERIAL SENT IN:** One package of Ribes specimens was sent in by a forest ranger, and twelve or more packages by the County Commissioners. None of the material had any kind of a rust on it, however. In fact, no Cronartium ribicola was found during the entire season either upon pines nor Ribes. Two reports came in of suspicious plants. In each case, a scout was sent to make a thorough investigation, but after careful examination found nothing suspicious.

No material nor any sort of a report came in regarding work done from anyone connected with the U. S. Forest Service nor the timber organizations.

**RECOMMENDATIONS:** In case the work in California is continued next summer, I would make the following recommendations:

First, in order to expedite matters as much as possible, I would suggest that before the California office is opened, sufficient supplies be at the Seattle office to supply the needs of the California office without unnecessary delay. These supplies will include the lantern slides requested of the Office of Illustrations last June, but not delivered even by the time the California office was closed. A prompt furnishing of supplies will save much lost motion that was inevitable last summer.



Second, with the same end in view, time can be saved by arranging for Mr. Strong's use of the frank in advance of the opening of the California office.

Third, the Ribes and Pine census cards are not at all suitable for use in California as long as eradication is not required. They contain blanks for so much data not pertaining to the California situation that they are confusing. One of the co-operators frankly said that it would be useless for him to send them out, for his men would not be able to understand them; and the Forest Service did not send them, out, either. I would recommend the use of the *Cronartium ribicola* cards for Ribes and pines as revised by Mr. Posey for use in California.

Fourth, a number of County Commissioners requested exhibits at their County Fairs. I recommend that this matter be taken up with Mr. Hecke and Mr. Strong, and if they approve, that arrangements be made with the Office of Exhibits for such exhibits at all County Fairs in the State where the County Commissioners would care for them.

Fifth, the experience of the past summer has apparently indicated that too extensive co-operation is unwieldy, unreliable, unprofitable, and the cause of much lost motion. The results of our two formal conferences are given at some length on one of the preceding pages. It took time to hold these conferences, more time to carry out the various suggestions of the conferees, and with inadequate results therefore. I would most strongly recommend that the Office of Blister Rust Control enter into a co-operative agreement again for next summer with the California State Department of Agriculture along the lines of the 1922 agreement, and that the County Horticultural Commissioners and the State Board of Forestry be also asked to co-operate. I am of the opinion that nothing worth while can be expected of the timber interests, and that while an agreement with them might be made, it will result only in taking up time that might well and profitably be spent along other lines. The U. S. Forest Service can well be expected to carry on blister rust investigations along its own lines, and will in any event act more or less independently of the Office of Blister Rust Control. Of course, I do not mean to ignore any requests that might be made from these quarters, but on the contrary to give them any and all assistance they might ask for. But it is the business of the Bureau of Plant Quarantine of the State Department of Agriculture to endeavor to keep blister rust out of the State; and they can and will co-operate with us fully.

IN CONCLUSION: permit me to thank the Seattle office for all the assistance given to me during the season. I could not have asked for better scouts than the ones sent me. Mr. Parker and Mr. Duncan were both greatly interested in their work, created a good impression, were diplomatic, and did effective work. I should be glad to have their services again next summer in case I should be in charge of the work.

The State Department of Agriculture of California gave to me every assistance in its power for the effectiveness of my work. Mr. Strong at all times gave me his unqualified support; and on numerous occasions I profited by his suggestions. Without exception, my relations with the employees of the California State Department of Agriculture were pleasant. Mr. Bronte Reynolds, editor of the Department, was of great assistance in giving the blister rust campaign prominence in the press of the State.





I feel that a good start was made last summer toward the blister rust work to be done in California, and that a good foundation was laid toward still more effective work in 1923.

Respectfully submitted,

A. O. Garrett,

Assistant Pathologist.

### S U P P L E M E N T 1.

#### WHITE PINE BLISTER RUST FIELD WORK IN CALIFORNIA

By A. O. Garrett

OBJECT OF WORK: The special objects of the blister rust work in California for the season of 1922 will be as follows:

1. To locate and inspect as many plantings of black currants (*Ribes nigrum*) and as many planted and native five-needle pines as possible.
2. To educate the public concerning blister rust, with special reference to the following points:
  - a. The destructiveness of blister rust, and the fact that it is now a problem of immediate importance to California.
  - b. The value of sugar pine as an asset to this state.
  - c. The danger to the sugar pines if blister rust becomes established in California.

PERSONNEL AND ORGANIZATION: The work will be under the general supervision of Mr. Lee A. Strong, Chief, Bureau Plant Quarantine of the California Department of Agriculture. Subject to a general plan, the actual details of supervision will be carried out by Mr. A. O. Garrett, of the Office of Blister Rust Control, Bureau of Plant Industry, U. S. Department of Agriculture, who will make Sacramento his field headquarters. Mr. Garrett will be responsible for seeing that the work is prosecuted in a sufficiently vigorous fashion so that as much as possible can be done in the course of the season. He will be responsible for the determination of all suspicious material sent in during the course of the season, and for the proper filing of all records as they come to Mr. Strong's office. If there should be any calls for more extensive information on blister rust either from persons engaged in blister rust work or from private individuals it will be Mr. Garrett's duty to supply such information. Mr. Garrett will be provided with two scouts, who will carry on such special scouting or inspection work as is considered necessary by Mr. Strong and Mr. Garrett. He will also be provided with stenographic assistance, this stenographer to attend to all office details in order that Mr. Garrett will be free to travel as much as



necessary.

In addition to this central organization, the actual field work will be carried on by the following organizations:

1. The State Department of Agriculture.
2. The County Horticultural Commissioners.
3. The Farm Advisors.
4. The U. S. Forest Service.
5. The employees of the California State Board of Forestry.
6. The employees of the California timber organizations.

#### METHODS OF WORK:

1. The California State Department of Agriculture. Those men of the California State Department of Agriculture now engaged in predatory animal work will spend what time they can spare in scouting the native five-leaf pines and currants for blister rust.

2. County Horticultural Commissioners. A letter will be prepared by Mr. Garrett in a form satisfactory to Mr. Strong, which will be sent to the County Horticultural Commissioners, with Mr. Strong's signature. This letter will explain the immediate importance of blister rust, as a California problem and the fact that this is one important forest problem in which the farmer and the Commissioner can be of great active assistance. In this letter each Commissioner will be asked to give a general estimate of the number of cultivated black currants and of five-leaf pines in yards, parks, cemeteries, etc. growing in his county, whether they are thriving, and whether the culture of this species of currant and of the five-leaf pines is increasing or decreasing. From the replies to these letters it is hoped that we can judge which parts of the State are of greatest importance from the standpoint of blister rust work.

In all counties, or in those counties where it is deemed advisable from the replies to the above letters, the Commissioners will be asked to make a census of the cultivated black currants and the planted five-leaf pines. They will do this in the course of their regular work, but it is expected that they will endeavor to make a very thorough inspection of those townships or other regions where the distribution of the cultivated black currants is densest. It is also expected that all planted five-leaf pines will be most thoroughly inspected. The Commissioners will be supplied with kibes and pine census cards. Where they find cultivated black currants or planted five-leaf pines, they will make the proper record of the plantings, if this has not already been done by the farm advisors, and will inspect the plants for blister rust. If any suspicious material is found, it will immediately be sent to Mr. Strong's office, and there determined by Mr. Garrett. The cards recording the plantings found will be sent to Mr. Strong's office at least twice a month, and will then be properly filed by Mr. Garrett.





3. The Farm Advisors. The Farm Advisors in California will be supplied by the Office of Blister Rust Control with the necessary information and illustrative material for a fifteen or twenty minute talk on blister rust. During the course of the present season they will give this talk before each of the farm centers in their counties. At the completion of this talk, they will distribute to those members of the farm centers who have not already made out census cards franked envelopes addressed to Mr. Garrett at Mr. Strong's office, each envelope containing several Ribes and five-leaf pine census cards. Those who receive the cards will be asked to locate and record plantings of cultivated black currants and of five-leaf pines, either on their own or their neighbors' farms, which previously have not been reported. In case either they or the Farm Advisors find any suspicious material it will be sent immediately to Mr. Strong, to be determined by Mr. Garrett.

4. U. S. Forest Service. The Office of Blister Rust Control will supply Mr. Paul G. Redington, District Forester at San Francisco, with literature on blister rust and with general ideas concerning the scouting it is desired to have done by the field force of the Forest Service. Mr. Redington will then transmit this literature to his field men, with definite instructions concerning the scouting. Any suspicious material that is found will be sent to Mr. Garrett, in care of Mr. Strong at Sacramento, for his determination or for his records.

5. California State Board of Forestry. The field employees of the California State Board of Forestry will be instructed by the State Forester to record any five-leaf pines that they can find in cultivation in the course of their work, to inspect these plants for disease, and constantly to watch for disease in native five-leaf pines. In order to do the census work they will be supplied with Ribes and pine census cards. They will send these cards to the Office of the State Forester at least once every two weeks, and from there they will be sent to Mr. Garrett, in care of Mr. Strong at Sacramento. If any suspicious material is found, it will immediately be sent to Mr. Garrett for determination, or for his records.

6. Timber organizations. As many employees of the timber organizations of California as shall be designated by their organization will be given such technical instruction by Mr. Garrett as will enable them to hunt for blister rust in the course of their regular duties. While the main work will be that of inspecting native currants and five-leaf pines for blister rust, they will also give such assistance as opportunity offers in inspecting planted black currants. If they should find any suspicious material it will be sent immediately to Mr. C. Stowell Smith, Secretary-manager of the California White and Sugar Pine Manufacturers' Association, at San Francisco. Mr. Smith will then send the material immediately to Mr. Garrett at Sacramento for determination.

The Office of Blister Rust Control will supply Mr. Smith with seventy-five sets of literature and instructions for this scouting work, these sets to be sent by Mr. Smith to the proper field employees of the timber organizations with instructions from Mr. Smith to carry on the scouting in connection with their regular duties.

SUMMARY: Of the seven organizations co-operating, in general the County Commissioners and Farm Advisors will confine their efforts to inspecting cultivated black currants and planted five-leaf pines; while the U. S. Forest



Service and the California State Board of Forestry will concentrate their efforts on the native five-leaf pines, currants and gooseberries.

The employees of the Timber Organizations will work on both native five-leaf pines, currants and gooseberries and cultivated black currant.

The employees of the California State Department of Agriculture engaged in predatory animal control will inspect such native five-leaf pines, currants and gooseberries as may occur in the territory they cover in the course of their regular work.

The scouts of the Office of Blister Rust Control will be used in general to scout the canyons leading away from those populated region where the most black currants are found, although their services will be available for any contingency that may arise.

Each group of field workers will be responsible directly to its own chief.

## S U P P L E M E N T 2.

### REPORT ON THE WORK DONE IN THE COUNTIES OF THE UPPER SACRAMENTO VALLEY.

By J. Roland Parker

The first county visited was Yuba. One day was spent in co-operation with Mr. G. H. Harney, County Horticultural Commissioner. While several of the parties reported as having black currants were visited, no bushes were found to be alive. Currants do not thrive in the lower valley due to the intense summer heat and lack of moisture. In fact, very few cultivated ribes are grown in the county. However, in the hills an abundance of both native currants and gooseberries are reported.

August 8 was spent in co-operative work with Mr. H. P. Stabler, Horticultural Commissioner of Sutter County and his deputy, Mr. C. E. King.

In company with Mr. King a scouting trip was made to Live Oak (15 miles north of Yuba City) and vicinity, where two recorded plantings of black currants were found to be alive. The bushes though free of rust had suffered severely from the heat.

The pines most common in Yuba County are the Digger pines and the Monterey pine, which has been set out on the old homesteads as ornamental, especially around Pennington (N. W. of Live Oak).

Sutter County is much like that of Yuba County in that the heat is too severe for growth of ribes.



Colusa County as well is very low and hot and the conditions unfavorable for the growing of Ribes.

A short time was spent in scouting and locating plantings with Mr. L. R. Boedefeld, as he was shipping fruit and could not leave the packing plant for any length of time. This was in the evening, while the morning was used in scouting the city of Colusa, its parks and cemeteries. No five-needled pines or black currants were located. Even those recorded had been destroyed or died from heat or lack of care.

The next stop made in Colusa County was with Mr. C. H. Leverett, State Ranger and Mr. A. J. Atran, Fire Warden at Arbuckle.

While Glenn County is farther north it is too dry and hot for the cultivation of Ribes. Few people have currants and gooseberries growing in their yards although numerous attempts have been made. The only pines in the valley are Digger pines and very few of these.

Two days were spent in scouting in co-operation with Mr. H. M. Kingwill, County Horticultural Commissioner. On the 11th of August we made a trip to Hamilton City (15 miles east of Orland) and vicinity, but luck was against us as no black currants or five-needled pines could be located. On the 12th, the vicinity of Orland was worked quite thoroughly without results.

Mr. Kingwill's deputy, Mr. W. H. Werfield, called at the office in Orland Saturday, and arrangements were made to meet him at Willows. At Willows in company with Mr. Gladbury, State Ranger, and Mr. Werfield, a trip was made into the edge of the California National Forest above Elk Creek (40 miles west of Willows). Here Digger pine, yellow pine, sugar pine and native gooseberries (*G. Roezli*) are found on the hills. No rust infections of any kind were found.

The next day Mr. Werfield and I went to Glenn (15 miles east of Willows) and found all recorded black currants dead, and were unable to locate any new plantings.

No scouting was done in Tehama County as the County Horticultural Commissioner, Mr. G. H. Flourney, was away on his vacation. However, the work was thoroughly explained to Mr. Andrew Schafer, State Ranger, in regard to the blister rust.

A very thorough survey to Shasta County was possible by making several long trips. On the 16th of August in company of Mr. L. E. Peterson, State Ranger, a trip was made to French Gulch (25 miles west of Redding). Here several plantings of currants were found. One planting of red currants numbered 100 bushes and another 12. A new planting of black currants was also found, just as you enter the town, on the property of E. G. Gartland, the original bush coming from a nursery in San Jose. No rust infections were found and the bushes were in a very healthy condition.

Sugar pine is to be found on the hills at a distance of two or three miles. Digger pine (three needled) is very plentiful on all the hills and *G. Roezli* is found on the hills and along the creeks.

The following day Mr. L. I. Stroup, County Horticultural





Commissioner and I made a trip up the Sacramento Canyon to Castella and return (65 miles north of Redding.) Specimens of sugar pine, native currants and gooseberries were taken six miles south of Castella and sent to you at Sacramento. A few red currants and gooseberry bushes were found in the Hotel grounds at Castella but no indications of rust.

On the 17th we started on a few days trip into the Fall River Valley. Numerous stops were made to inspect native ribes and pines along the highway. Several plantings of red currants were found and one new planting of black currants on the farm of H. W. Haynes (3 miles west of Burney). The planting was known to be twenty years old and now consists of a mass of bushes. Sugarpine is in the vicinity but no rust infections were to be found.

All through this section native currants and gooseberries are found along the streams and slopes.

The second day was used in scouting the valley. A large number of red currant plantings were located, but no one knew of any black currants or had ever heard of them. Record was made of the largest plantings in order to have some information at hand.

We learned through a Ranger, Mr. W. Reynolds (4 miles south of Doyle's Corner) on Hat Creek that he had one bush of black currant, so on our way out we stopped and inspected it. The bush was the biggest I have ever seen and came from Philadelphia in 1919 from the Henry Maule Seed Company. However, it is absolutely free from any disease. No sugar pine is found within one mile of this bush.

Specimens were taken from the bush and a number of native ribes I mailed to you in Sacramento. (To Mr. Garrett.)

Siskiyou County is very large and would be difficult to cover in two weeks, and little could be done but see the County Horticultural Commissioner, Mr. R. O. Gwyn, and the Forest Assistant and Supervisor of Yreka.

Mr. Gwyn and I made a trip to Grenada, Montague, Little Shasta Valley, and return one day. Black currants are very few and Julien place at Grenada which is healthy and free of disease.

On the way back to Redding I made stops at Weed and collected specimens of native ribes, also stopping at Sisson and seeing Mr. Millard Barnum and Mr. L. K. Lorensen, Forest Assistants.

The next morning after reaching Redding I took the Redding-Weaverville stage for Weaverville (60 miles west of Redding in Trinity County.) The county is very mountainous and rugged. All shipments of nursery stock must pass through Redding or come in through Humboldt County.

At Weaverville I met Mr. B. H. Mace, Supervisor of Trinity National Forest and made a scouting trip up to Stuart's Forest with him. Native currants and gooseberries grow along the streams and moister slopes. Sugar pine is found on all the higher elevations in the timber line. No rust infections of any kind were found.

I covered Weaverville thoroughly for black currants but was unable to locate any plantings.



I returned from Weaverville to Redding where I found your telegram awaiting me and returned to Sacramento at once.

While on the northern trip I inspected the following cemeteries for five-needed pines and ornamental lilies.

Marysville, Yuba City, Live Oak, Colusa, Catholic, Arbuckle, Orland, Willows, Redding Yreka, Little Chasta and Hornbrook.

#### REPORT ON THE BLISTER RUST WORK ON THE SOUTHERN TRIP

I left Sacramento at noon August 30, going via San Francisco. The first stop was made at Redwood City where I met Mr. A. W. Tate, Horticultural Commissioner of San Mateo County.

During our conversation on the blister rust work Mr. Tate mentioned having found some black currants which had been imported from Denmark several years ago. A hurried inspection was made but no rust infections were found. Mr. Tate was trying to locate the man who imported them (he is a mechanic and does not live on his farm at present.)

A half a day was spent with Horticultural Commissioner L. R. Cody and his two assistants R. W. Hunt and W. C. Tesche of Gilroy.

Mr. Cody called A. H. Oswald at Cupertino but could not reach him as he was at a fire about twenty miles away. Mr. Cody and his assistants are on the job and are giving all their spare time to blister rust work.

Mr. J. C. McKinney, Commissioner of San Benito County has not had a great amount of time to give to the blister rust work but promised to start at once. The only five-needed pine in this section is Pinus Torreyana, which is native and grows in the higher hills.

Mr. McKinney was kind enough to call Mr. J. B. Hickman, Commissioner of Monterey County and have him meet me at Watsonville at Mr. D. D. Penny's office. Mr. Hickman started on the blister rust work that morning, September 1, and is very conscientious in all that he does, so that we may expect a very complete report on Monterey County.

Mr. Penny, Horticultural Commissioner of Santa Cruz county, and I spent half a day in Santa Cruz during which time I was able to inspect five-needed pines recorded in Santa Cruz County. No infections of rust were found and all trees were healthy.

I have not seen Mr. Winkelman, Commissioner of El Dorado County but as I hear he is at the State Fair I will do my best to see him there.

I returned to Sacramento on the evening of September 3.





S U P P L E M E N T 3.

LIST OF PARTIES INTERVIEWED

By G. A. Duncan

San Joaquin County: Dr. Geo. Locke, Lockeford, S. R. Harry M. Ladd, Stockton, C. C. has an assistant handling blister rust scouting.

Stanislaus County: A. L. Kutherford, Modesto, C. C. had misplaced forms and blanks. I ordered new ones from the office for him. Has done a little scouting.

Merced County: E. E. Welt, Merced, C. C. with the aid of his deputy has looked up most of the names given him and has sent in two new plantings.

Madera County: Geo. Marchbank, Madera, C. C. has covered most of his list with his assistant. Has located several new plantings. He is well posted on the rust having followed it in "American Forestry" magazine for years. Mr. Marchbank gave a talk on the disease before the Lions Club on August 23, asking support of local business men in the work. Will have articles for the local papers ready soon.

Fresno County: Fred Roullard, Fresno, C. C. has instructed his inspectors to cover their districts and has the work well under way. He has put all of his specimens in Riker mounts in his office. Most of the plantings listed have been found to be dead. Mr. Roullard will interview the lumbermen in upper Fresno County who are cutting sugar pine and prevail on them to watch for infestations. Will conduct a school in the disease for assistants.

Tulare County: F. R. Brann, Visalia, C. C. has six inspectors in the field. They are reporting on the pine and currants in their respective districts, and they have been instructed in the appearance, habits, etc. of the fungus. He has placed posters showing the rust up in the conspicuous places such as Sequoia National Park and others in his county. He is willing to distribute any folders that may be sent him and spread propaganda to the public. He served five years in the U. S. Forest Service having been guide for G. B. Sudworth and John Muir on their investigational trips. Has asked his local nurseries for their sales lists to local customers. Mr. Brann has spoken of the rust before the Visalia, Dinuba and Exeter Chambers of Commerce or commercial clubs and also to the Visalia Kiwanis Club.

Kern County: Harold Pomeroy, Bakersfield, C. C. has put Mr. Androus, his deputy, in charge of the blister rust work. Mr. Androus has had scientific training and is deeply interested. The county is divided into districts and is well scouted already.

San Bernardino County: J. P. Coy, San Bernardino, C. C. has been very busy with fumigation work and has done very little to date. Intends to allot portions of his county to his inspectors. Mr. Coy has had published several articles on the rust. I saw the reporter who handled the articles and he will gladly print more blister rust news. He will look up the dates of publication in the files and forward copies.



P. C. Harvey, San Bernardino, S. R. has done some scouting among the native Ribes in the San Bernardino mountains.

Fred Jekev, San Bernardino, Assistant Supervisor U. S. F. S.

Riverside County: A. E. Bottell, Riverside, C. C. has divided his county up into districts and has given each of his inspectors a portion. He wishes to have as many farm bulletins as possible sent to him for distribution. A few posters would also be appreciated.

F. M. Baird, Corona, S. R. is working in cooperation with Mr. Bottell, C. C. in locating plantings of black currants and white pine.



## 5. Scouting and Eradication in Idaho

The Federal blister rust work in Idaho during the period March 21 to October 31, 1922 was carried on in accordance with the following memorandum of understanding between the various cooperating agencies:

MEMORANDUM OF UNDERSTANDING BETWEEN THE IDAHO DEPARTMENT OF AGRICULTURE, THE UNIVERSITY OF IDAHO, THE NORTH IDAHO FORESTRY ASSOCIATION, AND THE BUREAU OF PLANT INDUSTRY, UNITED STATES DEPARTMENT OF AGRICULTURE, RELATIVE TO CO-OPERATIVE WORK ON THE CONTROL OF WHITE PINE BLISTER RUST IN IDAHO.

Effective May 15, 1922, to March 31, 1923

The object of this memorandum of understanding shall be to facilitate the prompt location and eradication or effective control of white pine blister rust in Idaho, in view of the threatened destruction of private, state, and national white pine timber throughout the West as a result of the presence of this disease in British Columbia and Washington, and the danger of its further spread by natural dissemination or quarantine violations.

It is agreed that the Idaho Department of Agriculture, the University of Idaho, and the North Idaho Forestry Association (and its constituent timber protective associations), parties of the first part; and the Bureau of Plant Industry, United States Department of Agriculture, party of the second part, shall co-operate to the above ends in accordance with the following plan:

1. The Bureau of Plant Industry shall pay the salaries and expenses of one or more men as scouts who shall do the necessary scouting for the disease in Idaho. The Idaho Department of Agriculture shall deputize these scouts to enable them to enter and inspect any property but not to destroy plants.
2. In view of the fact that the Idaho Department of Agriculture has no special appropriation for blister rust control, it is understood that if this disease appears in Idaho, the Idaho Department of Agriculture agrees immediately to make every effort to secure funds for its eradication from sources available to it, and in the event of failure to secure necessary funds for this purpose, the Idaho Department of Agriculture shall deputize the employees of the Bureau of Plant Industry working in Idaho, empowering them to destroy blister rust host plants infected or potentially infected with this disease.
3. The Idaho Department of Agriculture and the Bureau of Plant Industry shall co-operate in the strict enforcement of State and Federal blister rust quarantines now in effect or which may be promulgated. The Bureau of Plant Industry shall pay the salaries and expenses and direct the work of one or more men who shall during the proper season inspect for violations of the Federal blister rust quarantines in the State of Idaho. These men shall also co-operate with the Idaho Department of Agriculture in enforcing State quarantines. For this purpose they shall receive instruc-





tions in methods of procedure from the Idaho Department of Agriculture and shall be deputized to destroy plants shipped in violation of state quarantines.

4. The Idaho Department of Agriculture shall use its regular employees, in so far as their other duties may permit, in systematically locating cultivated black currants and other infected or potentially infected host plants; in scouting for the blister rust; in inspecting nurseries for this disease and in enforcing state and federal blister rust quarantines. Such work will aggregate a total expenditure on the part of the Idaho Department of Agriculture of approximately \$4,583.00 for the control of this disease for the period covered by this agreement. The expenditures of the Bureau of Plant Industry indicated in the previous paragraphs will aggregate approximately \$7,000.00 but none of the federal funds shall be expended in compensation for plants destroyed in control work.

5. The University of Idaho School of Forestry shall pay the salary of one of its instructors who shall have immediate charge of the scouting work in Idaho. The Bureau of Plant Industry shall take up all expenses and transportation costs of said instructor while actually engaged in the work and supervision. It is understood that the said instructor in charge of the work shall give it his full time from June 15 to September 15 and after September 15, shall supervise the work in a general way and when completed shall make such reports, plans, and details as may be called for by the Bureau of Plant Industry. Such work will aggregate a total expenditure on the part of the School of Forestry of approximately \$1,000.00 for the control of this disease for the period covered by this agreement.

6. The Department of Plant Pathology of the University of Idaho Agricultural Experiment Station agrees to examine all specimens suspected of being infected with the white pine blister rust when sent in by the field scouts and to keep the necessary records of such collections. It is also agreed that all specimens which are suspected of being infected with the blister rust shall be submitted to the Bureau of Plant Industry for critical determination. Such work will aggregate a total expenditure on the part of the Department of Plant Pathology of the University of Idaho Agricultural Experiment Station of approximately \$1,000.00 for the control of this disease for the period covered by this agreement.

7. The Extension Division of the University of Idaho College of Agriculture shall use its regular employees, in so far as their other duties may permit, in locating cultivated black currants and other infected or potentially infected blister rust host plants, and in giving publicity to the campaign to eradicate black currants and to other means for preventing the introduction and spread of white pine blister rust in Idaho. Such work will aggregate a total expenditure on the part of the Extension Division of the University of Idaho College of Agriculture of approximately \$250.00 for the control of this disease for the period covered by this agreement.



8. The North Idaho Forestry Association shall use its regular employees and the employees of its constituent timber protective associations, in so far as their duties may permit, in systemically locating cultivated black currants and the scouting for the blister rust, and in locating infected or potentially infected host plants. Such work will aggregate a total expenditure on the part of the North Idaho Forestry Association of approximately \$11,750.00 for the control of this disease for the period of time covered by this agreement.

9. All official records of the work performed under this agreement shall be open to inspection by any or all parties to this agreement. All findings of the blister rust made by any party to this agreement shall be promptly reported to all other parties to this agreement. All specimens collected by any party to this agreement, which are suspected to be infected with blister rust shall be submitted to the Bureau of Plant Industry for critical determination. The Bureau of Plant Industry shall give such technical information to the employees of the parties to this agreement as will enable them to recognize the several stages of the disease.

10. It is understood that the Bureau of Plant Industry shall be primarily responsible for scouting and locating the blister rust in Idaho and for furnishing technical information on its control but that the Federal government has no authority to destroy private or State property and therefore that the Idaho Department of Agriculture shall be wholly responsible for destroying such pines, currant and gooseberry plants as may be found necessary in order to control the spread of this disease in Idaho, including plants shipped in violation of State and Federal blister rust quarantines and regulations.

11. This memorandum of understanding shall take effect May 15, 1922 and continue in force until March 31, 1923, or until previously terminated by mutual consent of the parties concerned.

#### SIGNATURES

Date May 15, 1922

Miles Cannon  
Commissioner, Idaho Department of Agriculture.

Estimated Value of  
Co-operative Work.  
\$4,583.00

Date May 15, 1922

W. H. Wicks  
Director, Bureau of Plant Industry, Idaho Department of Agriculture.

Date May 15, 1922

F. C. Miller  
Dean, School of Forestry, University of Idaho.

\$1,000.00

Date May 15, 1922

H. J. Ladings  
Director, Agricultural Experiment Station, University of Idaho.





|                   |   |                  |
|-------------------|---|------------------|
| Date May 15, 1922 | <u>L. W. Pluharty</u><br>Director, Extension Division of the College of Agriculture, University of Idaho. | <u>100.00</u>    |
| Date May 15, 1922 | <u>C. W. Hungerford</u><br>Pathologist, Agricultural Experiment Station, University of Idaho              | <u>250.00</u>    |
| Date May 15, 1922 | <u>A. W. Laird</u><br>President, North Idaho Forestry Association   | <u>11,750.00</u> |
| Date May 15, 1922 | <u>W. D. Humiston</u><br>Secretary, Potlatch Timber Protective Association                                |                  |
| Date May 15, 1922 | <u>T. J. Humbird</u><br>President, Clearwater Timber Protective Association                               |                  |
| Date May 15, 1922 | <u>J. P. McGoldrick</u><br>President, Coeur d'Alene Timber Protective Association                         |                  |
| Date May 15, 1922 | <u>B. H. Hornby</u><br>President, Pend Oreille Timber Protective Association                              |                  |
| Date May 15, 1922 | <u>Ben. E. Bush</u><br>President, Priest River Timber Protective Association                              |                  |
| Date May 15, 1922 | <u>W. F. Taylor</u><br>Chief, Bureau of Plant Industry, United States Department of Agriculture           | <u>7,000.00</u>  |



REPORT OF SCOUTING FOR WHITE PINE BLISTER RUST  
IN THE STATE OF IDAHO

By Henry Schmitz

OUTLINE OF REPORT

- I. Summary of scouting.
- II. Financial summary.
- III. Introduction.
  - A. Statement of problem.
  - B. Recommendation of Portland Conference.
- IV. Report of work done.
  - A. Cooperative agreement.
  - B. Forces involved.
    - 1. Federal.
    - 2. State.
      - a. State Department of Agriculture.
      - b. University of Idaho.
        - aa. School of Forestry.
        - bb. College of Agriculture.
    - 3. Private.
  - C. Work done by the Federal Government.
    - 1. Development of scouting plans, showing necessity for type of work done.
    - 2. Personnel, training, methods, transportation, reports and maps.
    - 3. Results obtained.
      - a. Location of black currants and white pines located and inspected.
      - b. Distribution of wild Ribes.
    - 4. Detailed tabulation of expenditure of federal funds.
  - D. Work done by the State.
    - 1. Voluntary destruction of cultivated black currants.
      - a. Education.
      - b. Destruction of black currants at time of inspection.
      - c. Destruction of black currants after time of inspection.
      - d. Owners not willing.
      - e. Plantings concerning which no information is available.
      - f. Summary of black currants destroyed.
  - E. Work done by private interests.
  - F. Recommendations.



- 1. SUMMARY OF SCOUTING

White pine blister rust was not found either upon Ribes nor upon white pine during during the course of the summer's scouting in Idaho. The following data indicate the extent of the work in the State of Idaho.

|     |  |        |
|-----|--|--------|
| (1) | Miles of road scouted.....                                     | 14,668 |
| (2) | Number of towns scouted.....                                   | 468    |
| (3) | Number of towns in which black currants<br>were inspected..... | 102    |
| (4) | Number of cultivated black currants<br>inspected.....          | 3,400  |
| (5) | Number of cultivated black currant<br>plantings inspected..... | 398    |
| (6) | Number of wild Ribes inspected<br>(estimated).....             | 6,747  |
| (7) | Number of planted white pines inspected.....                   | 141    |
| (8) | Number of native white pines inspected.....                    | 1,540  |
|     | Total number of pines and Ribes examined                       | 12,226 |

The status of the cultivated black currants located and inspection in the State of Idaho for 1922, is shown by the following table:





## II. FINANCIAL SUMMARY

The cost of operations in the State of Idaho is shown by the following table:

### Personnel

|                | :        | :        | :        | Salary   | :          | Subsistence | :         |
|----------------|----------|----------|----------|----------|------------|-------------|-----------|
|                | :        | Super-   | Man      | Average: | Total      | Average:    | Total     |
| Type of work:  | -vision: | Days:    | per day: |          |            | per day:    |           |
|                | :        | :        | :        | :        | :          | :           | :         |
| Scouting       | :        | Federal: | 713:     | \$2.98   | :          | \$1689.07:  | \$3.47    |
|                | :        |          |          |          | :          |             | \$1964.91 |
|                | :        | :        | :        | :        | :          | :           | :         |
| Auxiliary      | :        | :        | :        | :        | :          | :           | :         |
| Scouting       | :        | "        | :        | 114:     | 5.25       | :           | 598.84:   |
|                | :        |          |          |          |            | :           | 2.54      |
|                | :        |          |          |          |            | :           | 289.77    |
|                | :        | :        | :        | :        | :          | :           | :         |
| School         | :        | :        | :        | :        | :          | :           | :         |
| Campaign       | :        | "        | :        | 91:      | 4.85       | :           | 441.79:   |
|                | :        |          |          |          |            | :           | 3.42      |
|                | :        |          |          |          |            | :           | 267.21    |
|                | :        | :        | :        | :        | :          | :           | :         |
| Total          | :        | :        | 918:     | :        | \$2729.70: | :           | \$2521.89 |
| Average (mean) | :        | :        | :        | \$3.57   | :          | \$3.17      | :         |

### Transportation

| Type of work:  | Mileage: | per mile: | Automobile |      | Travel other than Automobile |
|----------------|----------|-----------|------------|------|------------------------------|
|                |          |           | Total      | Cost |                              |
| Scouting       | 14,668:  | \$0.077 : | \$1130.57: |      | \$150.00                     |
| Auxiliary      | :        | :         | :          | :    | :                            |
| Scouting       | --       | --        | --         | --   | 123.89                       |
| School         | :        | :         | :          | :    | :                            |
| Campaign       | --       | --        | --         | --   | 114.63                       |
| Total          | 14,668:  | :         | \$1130.57: |      | \$388.52                     |
| Average (mean) | :        | \$0.077 : | :          | :    |                              |

### Total

| Type of work: | Supplies: | Salary     | Trans-<br>portation: | Sub-<br>sistence: | Total     |
|---------------|-----------|------------|----------------------|-------------------|-----------|
|               |           |            |                      |                   |           |
| Scouting      | --        | \$1689.07: | \$1280.57:           | \$1964.91:        | \$4934.55 |
| Auxiliary     | :         | :          | :                    | :                 | :         |
| Scouting      | \$258.54: | 598.84:    | 123.89:              | 289.77:           | 1271.04   |
| School        | :         | :          | :                    | :                 | :         |
| Campaign      | 350.57:   | 441.79:    | 114.63:              | 267.21:           | 1174.20   |
| Total         | \$609.11: | \$2729.70: | \$1519.09:           | \$2521.89:        | \$7379.79 |



### III. INTRODUCTION

The largest remaining body of white pine timber in the world is found within the borders of the State of Idaho. Naturally any disease or pest menacing this important tree is of peculiar interest to the state.

The distribution of ownership of white pine in Idaho makes this interest general. Although the ownership of the largest volume is in the hands of private parties, the state and federal governments have holdings of no little importance. According to Mason (x) the ownership of white pine in Idaho is distributed as follows:

|                         | Millions Bd. Ft. |
|-------------------------|------------------|
| Private.....            | 12,527           |
| National Forest.....    | 4,508            |
| Indian Reservation..... | 3                |
| State.....              | 2,467            |
| Total                   | <u>19,305</u>    |

The figures indicating the present stand of white pine in this state do not, however, adequately convey an idea of the importance of white pine to the State of Idaho. General conditions are not as favorable to forest growth in Idaho as they are in certain other states, hence, under forest management only the more rapidly growing and most valuable species commercially, can be grown at a profit. Should western white pine become generally infected with the disease and should the disease be as serious as it now appears to be from observations in British Columbia and Washington, Idaho will indeed be facing a serious problem.

#### A. Statement of Problem

The purpose of the work in Idaho was to locate the disease if it were present. Although the English black currant and planted white pine particularly served as indicator plants, both native Ribes and pines were inspected in considerable numbers.

As the work progressed the desirability of having as many black currants as possible destroyed became evident. Although this phase remained a secondary consideration, considerable attention was paid to it. Considerable data was also obtained on the distribution of the native species of Ribes and Grossularia.

#### B. Recommendations of Portland Conference

The above work was in direct compliance with the recommendations made at the 1921 Blister Rust Conference, held at Portland, Oregon, at which the following recommendations were made:

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(x) Mason, D. T. Timber ownership and timber production in the Inland Empire, Part V. page 15.





1. To determine the present distribution of the disease in the West.
2. To secure the destruction of all diseased or potentially diseased host plants as found.
3. To prevent further spread of the disease through the application of control measures and the enforcement of quarantines.
4. To inform the public concerning the disease and secure their cooperation in controlling it.
5. To conduct the necessary scientific investigations of the disease under western conditions, determine the rapidity with which it may spread in various directions, and determine the location of any possible natural barriers to its progress.

#### IV. REPORT OF WORK DONE

##### A. Statement of Problem

The scouting for white pine blister rust in the State of Idaho during the past season was done in accordance with the terms of the following "Memorandum of Understanding" between the various cooperating agencies.

(The memorandum of understanding between the Idaho Department of Agriculture, the University of Idaho, the North Idaho Forestry Association, and the Bureau of Plant Industry, United States Department of Agriculture, relative to cooperative work on the control of white pine blister rust in Idaho, is given in full on the preceding pages under the caption "5. Scouting and Eradication in Idaho".)

##### B. Forces Involved

###### 1. Federal.

In accordance with the terms of the above agreement the Office of White Pine Blister Rust Control agreed to pay the salaries and expenses of six scouts and to pay the expenses of Dr. Henry Schmitz, School of Forestry, University of Idaho, who was to have the direct supervision of the scouting work in Idaho.

###### 2. State.

The State forces involved under the cooperative agreement can be segregated as follows:

- a. State Department of Agriculture.
- b. University of Idaho.
  - aa. School of Forestry.
  - bb. College of Agriculture.

The State Department of Agriculture deputized all scouts working within the State and in so far as possible used their regular employees in



locating and inspecting cultivated black currants. In addition the State Department of Agriculture sent out letters asking owners of black currants to destroy them.

The School of Forestry, University of Idaho cooperated to the extent of paying the salary of Dr. Henry Schmitz, who had the immediate supervision of the scouting work. The School of Forestry, University of Idaho, also furnished stenographic help through the continuance of the work.

The College of Agriculture, through the Department of Plant Pathology, examined all infected Ribes and pine specimens sent in by the scouts.

### 3. Private.

The work carried on by the private agencies within the state was done under the direction of C. R. Stillinger, Office of White Pine Blister Rust Control and for this reason private activities are not included in this report.

## C. Work Done by Federal Government

### 1. Development of Scouting Plans, Showing Necessity for Type of Work Done.

Since as already stated the chief purpose of the work in Idaho was to locate the disease if present and as only six men were available to cover the entire state, it was felt necessary to confine most of the work to locating and inspecting cultivated black currants and planted white pines. However, a considerable number of wild Ribes and native Ribes were inspected.

At the same time the cultivated black currants were inspected, an effort was made by the scouts to have the owners destroy their black currant bushes. This phase of the work, however, will be considered under state activity.

In conjunction with the scouting and inspecting of cultivated black currants, collections of native Ribes were made. It was felt that this phase of the work was well worth the relatively small amount of time required to do it.

### 2. Personnel, Training, Methods, Transportation, Reports and Maps.

#### Personnel.

The following six students at the University of Idaho were selected for the scouting work: E. A. Snow, E. F. Bradfield, A. L. Parkins, H. L. Glindeman, C. C. Ryan, W. S. Stone.

These men segregated into three parties as follows:

1. E. A. Snow (in charge)  
H. L. Glindeman
2. E. F. Bradfield (in charge)  
A. L. Parkins



S. C. C. Ryan (in charge)  
W. S. Stone

#### Preliminary Training of Scouts.

In selecting scouts for the Idaho work, more emphasis was placed upon reliability than any other one characteristic. Upper classmen in the School of Forestry and in the College of Agriculture who were quite familiar with certain portions of the state were selected.

The men received preliminary instruction in the recognition of the disease and in its method of distribution. They also received some instructions in the recognition of the various species of wild Ribes and Grossularia growing in the State of Idaho. This was done more to enable them to recognize the various species, since all collections of the mature forms were sent to Mr. S. H. Wyckoff for final determination.

In order that the scouts might be thoroughly familiar with the importance of the work it was arranged to have Dean F. G. Miller give them several lectures on the importance of white pine to the state and the present and future management of the forests in Idaho. Mr. C. R. Stillinger also talked to the scouts on his experiences in scouting.

After this preliminary training, Latch County was scouted in a preliminary way, close supervision of the men being maintained. During the period of training, the men paid particular attention to the reaction of their listeners to their arguments. They also got the information well in hand during this period and worked up a line of argument which they could in use in future scouting.

Final training consisted in taking the men to Abbotsford to actually see the disease first hand and to note the damage done to white pine. This portion of the training was deemed very essential and worth while.

After returning from Abbotsford, the men were deputized by the Idaho State Department of Agriculture and received their final instructions.

#### Final Instructions to Scouts.

In order that there might be no misunderstanding among the various scouts as to what their duties were, which men were in charge of the parties, what counties were to be scouted and numerous other points, the following letters were sent them as the final instructions to guide them while engaged in this work.

June 23, 1922.

Mr. E. A. Snow,  
Moscow, Idaho (Copy to H. L. Glindeman)

Dear Mr. Snow:

The following brief statement of the work to be carried on in





Idaho under the supervision of the Office of White Pine Blister Rust Control will serve to guide you in your activities while engaged in this work.

The purpose of the work in Idaho is to locate the disease if present. This will be done by the following methods,

1. Locating and inspecting all black currants.
2. Locating and inspecting all planted white pines.
3. Inspecting and collecting when possible such native currant and gooseberry bushes as may be available. (It should be remembered that this work is secondary and should be done in connection with work outlined in 1 and 2).

A reasonable effort will also be made by your party to have property owners destroy their black currants. This must, however, be only suggested. The party consisting of yourself and H. L. Glindeman will be responsible for work done in the following counties: Pend O' Reille (Wash.), Boundary, Bonner, Kootenai, Benewah, Shoshone, Latah, and the northwest corner of Clearwater. You will be in charge of this party and personally responsible for its conduct, work, and proper use of the Ford assigned to it.

The location and inspection of the black currants and white pine will be recorded on the cards provided. These, together with a collection of suspicious leaves will be placed in the envelopes provided and sent in at least once a week to the Department of Plant Pathology, University of Idaho.

Notes will also be taken on the distribution of native currant and gooseberry bushes and white pine in so far as possible. Whenever possible a collection of wild currants and gooseberries will be made and sent into the Department of Plant Pathology, University of Idaho. These should be accompanied by sufficient data to make the collection of value. At the end of the week a report of the work accomplished during the past week will be submitted to me. Another report will be made which shows the work which is expected to be done the following week. Expense accounts will be made at the end of each month. At any time you will make such reports as may be requested.

You will at all times be courteous to, and considerate of the people with whom you deal. Do not exceed your authority and be careful of what you say. Make every effort in a suggestive way to have owners destroy their currants but remember you have no authority to compel them to destroy them. By all means do not antagonize them. Also remember that the Ford is for business only and should not be used for any other purpose.

Very truly yours,

HS:VEP

Agent.

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June 24, 1922.



June 24, 1922.

Mr. E. F. Bradfield,  
Moscow, Idaho.

(Copy to A. L. Parkins)

Dear Mr. Bradfield:

The following brief statement of the work to be carried on in Idaho under the supervision of the Office of White Pine Blister Rust Control will serve to guide you in your activities while engaged in this work.

The purpose of the work in Idaho is to locate the disease if present. This will be done by the following methods:

1. Locating and inspecting all black currants.
2. Locating and inspecting all planted white pines.
3. Inspecting and collecting when possible such native currant and gooseberry bushes as may be available. (It should be remembered that this work is secondary and should be done in connection with work outlined in 1 and 2).

A reasonable effort will also be made by your party to have property owners destroy their black currants. This must, however, be only suggestive. The party consisting of yourself and A. L. Parkins will be responsible for work done in the following counties: Nez Perce, part of Clearwater, Lewis, Idaho, Adams, Valley, part of Boise, Gem, Payette, Washington, and Canyon. You will be in charge of this party and personally responsible for its conduct, work, and proper use of the Ford assigned to it.

The location and inspection of the black currants and white pine will be recorded on the cards provided. These together with a collection of suspicious leaves will be placed in the envelope provided and sent in at least once a week to the Department of Plant Pathology, University of Idaho.

Notes will also be taken on the distribution of native currant and gooseberry bushes and white pine in so far as possible. Whenever possible a collection of wild currants and gooseberries will be made and sent into the Department of Plant Pathology, University of Idaho. These should be accompanied by sufficient data to make the collection of value. At the end of each week a report of the work accomplished during the past week will be submitted to me. Another report will be made which shows the work which is expected to be done the following week. Expense accounts will be made at the end of each month. At any time you will make such reports as may be requested.

You will at all times be courteous to, and considerate of the people with whom you deal. Do not exceed your authority and be careful of what you say. Make every effort in a suggestive way to have owners destroy their currants but remember you have no authority to compel them to destroy them. By all means do not antagonize them. Also remember that the Ford is for business only and should not be used for any other purpose.

Very truly yours,

HS:VEP

Agent.





June 24, 1922.

Mr. C. Ryan,  
Moscow, Idaho

(Copy to W. S. Stone)

Dear Mr. Ryan:

The following brief statement of the work to be done in Idaho under the supervision of the Office of White Pine Blister Rust Control will serve to guide you in your activities while engaged in this work.

1. Locating and inspecting all black currants.
2. Locating and inspecting all planted white pines.
3. Inspecting and collecting when possible such native currant and gooseberry bushes as may be available. (It should be remembered that this work is secondary and should be done in connection with work outlined in 1 and 2.)

On account of the extent of the territory to be covered by your party, you will be unable to locate all black currants and planted white pine but the entire area assigned to you will be covered in a general way. A reasonable effort will also be made by your party to have property owners destroy their black currants. This must, however, be only suggestive. The party consisting of yourself and W. S. Stone will be responsible for the work done in the following counties: Ada, Owyhee, part of Boise, Elmore, Camas, Gooding, Lemhi, Butte, Clark, Fremont, Jefferson, Madison, Teton, Lincoln, Jerome, Twin Falls, Cassia, Minidoka, Blaine, Custer, Bonneville, Bingham, Caribou, Power, Oneida, Franklin, Bear Lake, and Bannock. You will be in charge of this party and personally responsible for its conduct, work, and proper use of the Ford assigned to it.

The location and inspection of the black currants and white pine will be recorded on the cards provided. These, together with a collection of suspicious leaves will be placed in the envelopes provided and sent in at least once a week to the Department of Plant Pathology, University of Idaho.

Notes will also be taken on the distribution of native currant and gooseberry bushes and white pine in so far as possible. Whenever possible a collection of wild currants and gooseberries will be made and sent in to the Department of Plant Pathology, University of Idaho. These should be accompanied by sufficient data to make the collection of value. At the end of each week a report of the work accomplished during the past week will be submitted to me. Another report will be made which shows the work which is expected to be done the following week. Expense accounts will be made at the end of each month. At any time you will make such reports as may be requested.

You will at all times be courteous to, and considerate of the people with whom you deal. Do not exceed your authority and be careful of what you say. Make every effort in a suggestive way to have owners destroy their currants but remember you have no authority to compel them to destroy them. By all means do not antagonize them. Also remember that the Ford is for business only and should not be used for any other purpose.

HS:VLP

-130- AGENT.



It is evident that the sections assigned to the various parties varied greatly in area. This was done on account of the fact that the scouting was to be more intensive in the Northern half of the State than in the southern half and also on account of the great difference in the general nature of the two sections. Southern Idaho consists primarily of irrigated sections in an extensive sage brush area. As a result the inhabited area is relatively small when compared with the total area of the section.

#### Transportation.

The Ford cars were rented at the rate of \$75.00 per month, the owners keeping the cars in repair and the Office of Blister Rust Control furnishing the operating expenses. This arrangement was found very satisfactory both from the standpoint of the government and from the standpoint of the owners. Very little difficulty which actually held up the work was experienced with the cars.

#### Reports and Maps.

A report of the progress of the work was made on the first and the fifteenth of each month. The black currants located and inspected were reported in four classes, namely:

1. Destroyed.
2. Willing to destroy.
3. Not willing.
4. No information.

Making a tracing of the state and placing on this tracing the towns scouted and the highways traversed was found to be a convenient way in which to report the progress of the work. At the time of each report blue prints were made of this tracing. The series of blue prints thus show the general stage of the work for each report submitted.

#### 3. Results Obtained.

a. Summary of cultivated black currants, native Ribes and native and planted white pines located and inspected.



SUMMARY OF CULTIVATED BLACK CURRANTS, NATIVE RIBES AND NATIVE AND  
PLANTED WHITE PINES LOCATED AND INSPECTED IN IDAHO.

|            | : | :     | : | Black       | : | :                     | : | :              | : | :        | : | :           | : | :       | : | :      | :    | :      | :     |        |      |       |   |
|------------|---|-------|---|-------------|---|-----------------------|---|----------------|---|----------|---|-------------|---|---------|---|--------|------|--------|-------|--------|------|-------|---|
|            | : | :     | : | Currants    | : | White Pines Examined: | : | Wild Ribes     | : | Total    | : | :           | : | :       | : | :      | :    | :      | :     |        |      |       |   |
|            | : | :     | : | Miles:      | : | Examined              | : | Planted Pines: | : | Examined | : | Inspections | : | :       | : | :      | :    | :      | :     |        |      |       |   |
|            | : | :     | : | Man:Scout-: | : | Plant-:               | : | Plant-:        | : | Native:  | : | No.per:     | : | Total:  | : | Total: | :    | Total: | :     |        |      |       |   |
| County     | : | Days: | : | ed          | : | ings                  | : | Plants:        | : | ings     | : | Plants:     | : | Stands: | : | Mile   | :    | No.    | :     | Ribes: | :    | Pines |   |
| Ada        | : | 11    | : | 100         | : | 9                     | : | 37             | : | :        | : | :           | : | 2.87    | : | 250    | :    | 287    | :     | :      | :    | :     |   |
| Adams      | : | 4     | : | 93          | : | :                     | : | :              | : | :        | : | :           | : | 0.53    | : | 50     | :    | 50     | :     | :      | :    | :     |   |
| Bannock    | : | 9     | : | 105         | : | 14                    | : | 1105           | : | :        | : | :           | : | 12.04   | : | 15     | :    | 1120   | :     | :      | :    | :     |   |
| Bear Lake  | : | 4     | : | 219         | : | 8                     | : | 59             | : | :        | : | :           | : | 0.68    | : | 92     | :    | 151    | :     | :      | :    | :     |   |
| Benewah    | : | 13    | : | 740         | : | 6                     | : | 22             | : | :        | : | 150         | : | 4.77    | : | 1600   | :    | 1622   | :     | 150    | :    | :     |   |
| Bingham    | : | 7     | : | 198         | : | 9                     | : | 30             | : | :        | : | :           | : | 0.53    | : | 75     | :    | 105    | :     | :      | :    | :     |   |
| Blaine     | : | 5     | : | 90          | : | 2                     | : | 11             | : | :        | : | :           | : | 1.90    | : | 160    | :    | 171    | :     | :      | :    | :     |   |
| Boise      | : | 2     | : | 92          | : | :                     | : | :              | : | :        | : | :           | : | 0.32    | : | 30     | :    | 30     | :     | :      | :    | :     |   |
| Bonner     | : | 32    | : | 490         | : | 32                    | : | 130            | : | :        | : | 350         | : | 2.46    | : | 1075   | :    | 1205   | :     | 350    | :    | :     |   |
| Bonneville | : | 11    | : | 265         | : | 16                    | : | 119            | : | :        | : | :           | : | 1.05    | : | 160    | :    | 279    | :     | :      | :    | :     |   |
| Boundary   | : | 28    | : | 390         | : | 19                    | : | 85             | : | :        | : | 150         | : | 0.66    | : | 175    | :    | 260    | :     | 150    | :    | :     |   |
| Butte      | : | 3     | : | 86          | : | 4                     | : | 31             | : | :        | : | :           | : | 0.82    | : | 40     | :    | 71     | :     | :      | :    | :     |   |
| Camas      | : | 2     | : | 90          | : | :                     | : | :              | : | :        | : | :           | : | 0.27    | : | 25     | :    | 25     | :     | :      | :    | :     |   |
| Canyon     | : | 19    | : | 257         | : | 3                     | : | 15             | : | :        | : | :           | : | 0.15    | : | 25     | :    | 40     | :     | :      | :    | :     |   |
| Caribou    | : | 1     | : | 54          | : | 1                     | : | 2              | : | :        | : | :           | : | 0.03    | : | :      | :    | 2      | :     | :      | :    | :     |   |
| Cassia     | : | 6     | : | 202         | : | 2                     | : | 4              | : | :        | : | :           | : | 1.57    | : | 315    | :    | 319    | :     | :      | :    | :     |   |
| Clark      | : | 2     | : | 126         | : | :                     | : | :              | : | :        | : | :           | : | 0.07    | : | 10     | :    | 10     | :     | :      | :    | :     |   |
| Clearwater | : | 17    | : | 283         | : | 4                     | : | 21             | : | :        | : | 75          | : | 0.26    | : | 54     | :    | 75     | :     | 75     | :    | :     |   |
| Custer     | : | 4     | : | 172         | : | 1                     | : | 3              | : | :        | : | :           | : | 0.54    | : | 90     | :    | 93     | :     | :      | :    | :     |   |
| Elmore     | : | 4     | : | 163         | : | 3                     | : | 27             | : | :        | : | :           | : | 0.62    | : | 75     | :    | 102    | :     | :      | :    | :     |   |
| Franklin   | : | 8     | : | 175         | : | 13                    | : | 77             | : | :        | : | :           | : | 1.46    | : | 180    | :    | 257    | :     | :      | :    | :     |   |
| Fremont    | : | 8     | : | 336         | : | 36                    | : | 313            | : | :        | : | :           | : | 1.24    | : | 115    | :    | 428    | :     | :      | :    | :     |   |
| Gem        | : | 4     | : | 129         | : | :                     | : | 1              | : | 1        | : | :           | : | 0.09    | : | 12     | :    | 12     | :     | 1      | :    | :     |   |
| Gooding    | : | 4     | : | 58          | : | 4                     | : | 15             | : | :        | : | :           | : | 1.95    | : | 90     | :    | 105    | :     | :      | :    | :     |   |
| Idaho      | : | :     | : | :           | : | 18                    | : | 73             | : | :        | : | :           | : | :       | : | :      | :    | 73     | :     | :      | :    | :     |   |
| Jefferson  | : | 5     | : | 92          | : | 4                     | : | 23             | : | :        | : | :           | : | 0.25    | : | :      | :    | 23     | :     | :      | :    | :     |   |
| Jerome     | : | 5     | : | 60          | : | 13                    | : | 131            | : | :        | : | :           | : | 3.51    | : | 160    | :    | 211    | :     | :      | :    | :     |   |
| Kootenai   | : | 37    | : | 450         | : | 56                    | : | 176            | : | 1        | : | 1           | : | 200     | : | 2.28   | :    | 850    | :     | 1026   | :    | 201   |   |
| Latah      | : | 59    | : | 890         | : | 34                    | : | 193            | : | 17       | : | 127         | : | 25      | : | 0.70   | :    | 430    | :     | 623    | :    | 152   |   |
| Lemhi      | : | 6     | : | 382         | : | 1                     | : | 2              | : | :        | : | :           | : | 0.25    | : | 95     | :    | 97     | :     | :      | :    | :     |   |
| Lewis      | : | 12    | : | 235         | : | 10                    | : | 52             | : | :        | : | :           | : | 0.42    | : | 50     | :    | 102    | :     | :      | :    | :     |   |
| Lincoln    | : | 3     | : | 65          | : | 2                     | : | 7              | : | 1        | : | 1           | : | :       | : | 1.49   | :    | 90     | :     | 97     | :    | 1     |   |
| Madison    | : | 6     | : | 159         | : | 20                    | : | 128            | : | 1        | : | 1           | : | :       | : | 2.06   | :    | 100    | :     | 328    | :    | 1     |   |
| Minidoka   | : | 4     | : | 55          | : | 5                     | : | 33             | : | :        | : | :           | : | 2.14    | : | 85     | :    | 116    | :     | :      | :    | :     |   |
| Nez Perce  | : | 18    | : | 376         | : | 13                    | : | 43             | : | 2        | : | 5           | : | :       | : | 0.18   | :    | 25     | :     | 68     | :    | 5     |   |
| Oneida     | : | 4     | : | 167         | : | 15                    | : | 121            | : | :        | : | :           | : | 1.35    | : | 105    | :    | 226    | :     | :      | :    | :     |   |
| Owyhee     | : | 5     | : | 275         | : | 1                     | : | 1              | : | :        | : | :           | : | 0.09    | : | 25     | :    | 26     | :     | :      | :    | :     |   |
| Payette    | : | 4     | : | 87          | : | 1                     | : | 3              | : | :        | : | :           | : | 0.17    | : | 12     | :    | 15     | :     | :      | :    | :     |   |
| Power      | : | 5     | : | 177         | : | :                     | : | :              | : | :        | : | :           | : | 1.41    | : | 250    | :    | 250    | :     | :      | :    | :     |   |
| Shoshone   | : | 12    | : | 300         | : | 15                    | : | 47             | : | :        | : | 400         | : | 1.89    | : | 520    | :    | 567    | :     | 400    | :    | :     |   |
| Teton      | : | 2     | : | 85          | : | 1                     | : | 3              | : | :        | : | :           | : | 0.03    | : | :      | :    | 3      | :     | :      | :    | :     |   |
| Twin Falls | : | 12    | : | 309         | : | 8                     | : | 181            | : | :        | : | :           | : | 1.28    | : | 215    | :    | 396    | :     | :      | :    | :     |   |
| Valley     | : | 6     | : | 183         | : | :                     | : | :              | : | :        | : | :           | : | 0.13    | : | 25     | :    | 25     | :     | :      | :    | :     |   |
| Washington | : | 8     | : | 155         | : | 2                     | : | 6              | : | :        | : | :           | : | 0.19    | : | 24     | :    | 30     | :     | :      | :    | :     |   |
| Total      | : | 421   | : | 9015        | : | 405                   | : | 3329           | : | 23       | : | 136         | : | 1350    | : | :      | 7794 | :      | 11133 | :      | 1486 | :     | : |





## b. Distribution of Wild Ribes.

During the course of the scouting and inspection of the cultivated black currants, the scouts also collected samples of wild Ribes. These were pressed, sent in to the School of Forestry where they were mounted and then forwarded to Mr. S. N. Wyckoff for identification. In all, 447 collections were made and determined. With this data a Ribes distribution map for the State of Idaho was prepared.

## 4. Detailed Tabulation of Expenditure of Federal Funds.

The cost of the federal work done in the State of Idaho is shown in the following tabulation.

## II. FINANCIAL SUMMARY

The cost of operations in the State of Idaho is shown by the following table:

### P e r s o n n e l

| Type of work: | Super-vision: | Man Days: | Salary   |           | Subsistence |           |
|---------------|---------------|-----------|----------|-----------|-------------|-----------|
|               |               |           | Average: | Total     | Average:    | Total     |
|               |               | per day:  | per day: | per day:  | per day:    | per day:  |
| Scouting      | Federal:      | 713:      | \$2.98   | \$1689.07 | \$3.47      | \$1964.91 |
| Auxiliary     |               |           |          |           |             |           |
| Scouting      | Federal:      | 114:      | 5.25     | 598.84    | 2.54        | 289.77    |
| School        |               |           |          |           |             |           |
| Campaign      | Federal:      | 91:       | 4.85     | 441.79    | 3.42        | 267.21    |
| Total         |               | 918:      |          | \$2729.70 |             | \$2521.89 |
| Mean Average: |               |           | \$3.57   |           | \$3.17      |           |

### T r a n s p o r t a t i o n

| Type of work: | Automobile |           | Total     | Travel other than Automobile |
|---------------|------------|-----------|-----------|------------------------------|
|               | Mileage:   | Cost      | Cost      |                              |
|               | per mile:  | per mile: | per mile: | per mile:                    |
| Scouting      | 14,668:    | \$0.077   | \$1130.57 | \$150.00                     |
| Auxiliary     |            |           |           |                              |
| Scouting      | --         | --        | --        | 123.89                       |
| School        |            |           |           |                              |
| Campaign      | --         | --        | --        | 114.63                       |
| Total         | 14,668:    |           | \$1130.57 | \$388.52                     |
| Mean Average: | \$0.077    |           |           |                              |

(1)

(2)

(3)

# T o t a l

| Type of work: | Supplies: | Salary :  | Trans-<br>portation: | Sub-<br>sistence: | Total     |
|---------------|-----------|-----------|----------------------|-------------------|-----------|
| Scouting      | --        | \$1689.07 | \$1280.57            | \$1964.91         | \$4934.55 |
| Auxiliary     | :         | :         | :                    | :                 | :         |
| Scouting      | \$258.54  | 598.84    | 123.89               | 289.77            | 1271.04   |
| School        | :         | :         | :                    | :                 | :         |
| Campaign      | 350.57    | 441.79    | 114.63               | 267.21            | 1174.20   |
| Total         | \$609.11  | \$2729.70 | \$1519.09            | \$2521.89         | \$7379.79 |

## D. Work Done by the State

### 1. Voluntary Destruction of Cultivated Black Currants.

Due to the gravity of the situation and since there is no law under which the Idaho State Department of Agriculture could compel owners of black currants to destroy them, it was felt that an effort should be made by the Idaho State Department of Agriculture to have owners destroy their black currants voluntarily. The relative success of this is indicated in the summary.

#### a. Education.

It was soon noted that some form of card bearing certain information concerning the importance of the lumber industry to the State of Idaho, and signed by a recognized authority would facilitate this work. In pursuance to this idea, the following card was prepared by the School of Forestry, University of Idaho, and the cost of printing shared by the State Department of Agriculture, The School of Forestry, University of Idaho and Mr. G. B. Posey, Office of White Pine Blister Rust Control.

These cards were freely distributed over the entire state and were enclosed in all blister rust correspondence during the scouting season. It is felt that these cards paid for themselves many times over.





HELP PROTECT  
IDAHO'S WHITE PINE  
WHITE PINE BLISTER RUST

An Exceedingly Destructive Disease is in the West.

---

Immediate and whole-hearted cooperation is necessary to keep it out of Idaho. This disease requires the presence of Currants or Gooseberries to spread to White Pine. Cultivated Black Currants are particularly susceptible. If you have any Black Currant bushes it is your duty to destroy them. Cultivated Black Currants are dangerous anywhere in the State as they attract the disease and favor its rapid spread into the White Pine region.

The Lumber Industry is one of Idaho's leading industries. It employs sixty per cent of the entire industrial population. It pays \$18,000,000 annually in wages in addition to \$4,000,000 for supplies. It represents an invested capital of \$50,000,000 and produces annually a product worth \$40,000,000. It pays \$1,000,000 in taxes. The lumber industry is essential to the permanent prosperity of the State. White Pine is our most valuable timber tree. Your co-operation is needed.

DESTROY YOUR CULTIVATED BLACK  
CURRANT BUSHES

---

Idaho State Department of Agriculture, Boise, Idaho.  
University of Idaho, Moscow, Idaho.  
North Idaho Forestry Association, Potlatch, Idaho.  
Bureau of Plant Industry, U. S. Dept. of Agriculture,  
co-operating.

---

b. Destruction of Black Currants at the Time of Inspection.

Very often owners of black currants would ask the scouts at the time of inspection what they could do to help prevent white pine blister rust from reaching this state. They were then asked to destroy their black currants and if they were willing the scouts would assist in the work to see that it was well done. Eighty-four plantings totaling 368 bushes were destroyed in this manner. All owners of black currants who destroyed them, were sent the following letter over the signature of Mr. W. H. Wicks, Director, Bureau of Plant Industry, State Department of Agriculture.

As you no doubt know the U. S. Department of Agriculture and the State Department of Agriculture are making every effort to protect the vast white pine forests of Idaho from the white pine blister rust.



I have recently been informed, thru one of the representatives of these departments, that you have voluntarily destroyed your cultivated black currants. In behalf of these agencies, I want to take this opportunity to thank you for your prompt and hearty cooperation.

Respectrully,

W. H. Wicks,

Dir., Bureau of Plant Industry,  
Acting Dir., Bureau of Markets.

c. Destruction of Black Currants After Time of Inspection.

Early in the scouting season, many owners of black currants signified their willingness to destroy their black currants but that they would like to wait until the present crop was harvested. Other owners had other reasons for asking more time in which to destroy their plants. All owners of black currants who signified their willingness to destroy their plants were grouped in the "willing to destroy class" and received a copy of the following letter over the signature of Mr. Wicks, Director, Bureau of Plant Industry, State Department of Agriculture.

As you no doubt know the U. S. Department of Agriculture and the State Department of Agriculture are making every effort to protect the vast white pine forests of Idaho from the white pine blister rust.

This Department has been informed thru its representatives that you have several bushes of cultivated black currants on your premises, and that you will destroy them.

It is essential that action be taken to keep this dangerous disease out of Idaho. You have no doubt already been informed of the part that cultivated black currants play in the spread of this disease, but we are taking the liberty at this time to emphasize certain points which should be understood in this connection.

White pine blister rust cannot spread from pine to pine, but spreads from pine to currants or gooseberries, and from these back to pine. All currants and gooseberries may become infected under certain conditions, but the cultivated black currant may become infected under practically all conditions. Preliminary surveys have also shown that there are a sufficient number of planted and mature five-needled pines in all sections of the state to enable this disease to become established and then spread to the natural stands of white pine, no matter where the infection might be. For this reason we are making every effort to have all cultivated black currants in the state destroyed.







THE UNIVERSITY OF CHICAGO

PHILOSOPHY DEPARTMENT

PHILOSOPHY 101

LECTURE NOTES

PROFESSOR [Name]

DATE

TOPIC

1. Introduction

2. The Philosophy of Language

3. The Philosophy of Mind

4. The Philosophy of Science

5. The Philosophy of Mathematics

6. The Philosophy of Law

7. The Philosophy of Ethics

8. The Philosophy of Politics

9. The Philosophy of Religion

will not be many plantings remaining in the state. Personally I feel that every effort should be made to have a law passed compelling the destruction of all black currants.

During the past summer, thirty-one owners having 240 bushes refused to remove them under any conditions.

e. Plantings concerning which no information is available.

In this group are included plantings the owners of which were not at home at the time of inspection and plantings on rented places where the renter had no authority to destroy the bushes.

In case the owner was not at home at the time of inspection the following letter was sent. These letters have just recently been sent out and no returns have yet been received. A return envelope and a card to be filled out and returned when the black currants were destroyed were also enclosed with this letter.

Dear Sir:

As you no doubt know the U. S. Department of Agriculture and the State Department of Agriculture are making every effort to protect the vast white pine forests of Idaho from the white pine blister rust.

This Department has been informed thru its representatives that you have several bushes of cultivated black currants on your premises, but that you were not home at the time of his visit.

It is essential that prompt action be taken to keep this dangerous disease out of Idaho. You have no doubt already been informed of the part that cultivated black currants play in the spread of this disease, but we are taking the liberty at this time to emphasize certain points which should be understood in this connection.

White pine blister rust cannot spread from pine to pine, but spreads from pine to currants or gooseberries, and from these back to pine. All currants and gooseberries may become infected under certain conditions, but the cultivated black currants may become infected under practically all conditions. Preliminary surveys have also shown that there are a sufficient number of planted and mature five-needled pines in all sections of the State to enable this disease to become established and then spread to the natural stands of white pine, no matter where the infection might be. For this reason we are making every effort to have all cultivated black currants in the State destroyed.

By destroying your black currants you are helping safeguard one of Idaho's leading industries. We need your cooperation. May we count on it?

After you have destroyed your black currants, please fill out the enclosed cards in duplicate and mail them in the envelope also enclosed. No postage is necessary. In this way you will do your



part in keeping white pine blister rust out of Idaho.

Thanking you for your active interest and cooperation in destroying your black currants, I beg to remain

Respectively,

W. H. Wicks,

Dir., Bureau of Plant Industry,  
Acting Dir., Bureau of Markets.

In those cases where the property is rented and the renter had no authority to destroy the black currants the following letter and card were sent. Two copies of the card were sent in each case. One will be retained for our records and the other will be sent to the renter and will serve as his authority to destroy the black currant bushes. These letters have just recently been sent and no returns are as yet available. Seventy-three plantings comprising 413 bushes are at present listed in the "no information class".

Dear Sir:

As you no doubt know the U. S. Department of Agriculture and the State Department of Agriculture are making every effort to protect the vast white pine forests of Idaho from the white pine blister rust.

This Department has been informed thru its representatives that you have several bushes of cultivated black currants on your premises at the present time and we wish to know if you are willing to destroy them.

It is essential that prompt action be taken to keep this dangerous disease out of Idaho. You have no doubt already been informed of the part that cultivated black currants play in the spread of this disease, but we are taking the liberty at this time to emphasize certain points which should be understood in this connection.

White pine blister rust cannot spread from pine to pine, but spreads from pine to currants or gooseberries, and from these back to pine. All currants and gooseberries may become infected under certain conditions, but the cultivated black currants may become infected under practically all conditions. Preliminary surveys have also shown that there are a sufficient number of planted and mature five-needled pines in all sections of the State to enable this disease to become established and then spread to the natural stands of white pine, no matter where the infection might be. For this reason we are making every effort to have all cultivated black currants in the State destroyed.

By destroying your black currants you are helping safeguard one of Idaho's leading industries. We need your cooperation. May we count on it.





If you are willing to destroy your black currants, fill out the enclosed cards in duplicate and mail them in the envelope also enclosed. We will then inform the renter of your property of your action. We would also appreciate it if you would inform him directly. In this way you will do your part in keeping white pine blister rust out of Idaho.

Thanking you for your active interest and cooperation, I beg to remain

Respectively,

W. H. Wicks,

Dir., Bureau of Plant Industry,  
Acting Dir., Bureau of Markets.

.....  
.  
. Bureau of Plant Industry, .  
. Idaho State Department of Agriculture. .  
.  
. Gentlemen: .  
.  
. This is to inform you that I am willing to des- .  
. troy the black currants on my premises at \_\_\_\_\_ .  
. \_\_\_\_\_, and that you may inform the renter .  
. of my property of this fact. .  
.  
.  
.  
. \_\_\_\_\_ .  
. Signature .  
.  
.....

f. Summary of Black Currants Destroyed and Those not yet Destroyed in the State of Idaho.

The general status with reference to the destruction of black currants located in the State of Idaho is shown in the following table.



STATUS OF CULTIVATED BLACK CURRENTS LOCATED AND INSPECTED  
IN THE STATE OF IDAHO, 1922.

| County     | Black Currents<br>Destroyed |       |        |       | Black Currents Remaining |       |        |       | Totals         |       |        |       |
|------------|-----------------------------|-------|--------|-------|--------------------------|-------|--------|-------|----------------|-------|--------|-------|
|            |                             |       |        |       |                          |       |        |       |                |       |        |       |
|            |                             |       |        |       |                          |       |        |       |                |       |        |       |
|            | At time of:                 |       |        |       | Subsequent:              |       |        |       |                |       |        |       |
|            | Inspection:                 |       |        |       | Willing:                 |       |        |       | Not Specified: |       |        |       |
|            | No.                         | No.   | No.    | No.   | No.                      | No.   | No.    | No.   | No.            | No.   | No.    | No.   |
|            | Plant:                      | Bu-   | Plant: | Bu-   | Plant:                   | Bu-   | Plant: | Bu-   | Plant:         | Bu-   | Plant: | Bu-   |
|            | -ings:                      | shes: | -ings: | shes: | -ings:                   | shes: | -ings: | shes: | -ings:         | shes: | -ings: | shes: |
| Ada        | 1                           | 3     | 2      | 12    | 1                        | 9     |        | 3     | 9              | 7     | 33     |       |
| Bannock    | 3                           | 15    | 2      | 9     | 8                        | 1070  |        | 1     | 3              | 14    | 1397   |       |
| Bear Lake  |                             |       | 4      | 48    | 4                        | 11    |        |       |                | 8     | 59     |       |
| Benewah    |                             |       | 2      | 10    | 4                        | 12    |        |       |                | 6     | 22     |       |
| Bingham    |                             |       | 4      | 11    | 4                        | 13    |        | 1     | 6              | 9     | 30     |       |
| Blaine     | 1                           | 7     |        |       |                          | 1     | 4      |       |                | 2     | 11     |       |
| Bonneville | 2                           | 14    | 1      | 1     | 5                        | 31    | 2      | 45    | 6              | 38    | 16     | 129   |
| Butte      |                             |       | 2      | 15    | 2                        | 16    |        |       |                | 4     | 31     |       |
| Bonner     | 5                           | 8     | 6      | 22    | 10                       | 44    | 4      | 33    | 9              | 34    | 34     | 141   |
| Boundary   | 1                           | 1     |        |       | 3                        | 32    | 3      | 6     | 12             | 46    | 19     | 85    |
| Canyon     | 2                           | 10    |        |       | 1                        | 5     |        |       |                | 3     | 15     |       |
| Cassia     |                             |       | 2      | 4     |                          |       |        |       |                | 2     | 4      |       |
| Clearwater | 1                           | 4     | 1      | 3     | 2                        | 14    |        |       |                | 4     | 21     |       |
| Custer     |                             |       | 1      | 3     |                          |       |        |       |                | 1     | 3      |       |
| Caribou    |                             |       |        |       |                          |       |        | 1     | 2              | 1     | 2      |       |
| Elmore     | 1                           | 12    |        |       |                          |       |        | 1     | 10             | 2     | 22     |       |
| Franklin   |                             |       | 2      | 7     | 8                        | 26    |        | 3     | 44             | 13    | 77     |       |
| Fremont    | 1                           | 30    |        |       | 22                       | 205   | 1      | 13    | 13             | 67    | 37     | 315   |
| Gooding    | 2                           | 8     | 1      | 4     |                          |       |        | 1     | 3              | 4     | 15     |       |
| Idaho      | 14                          | 62    | 2      | 7     | 1                        | 2     |        | 1     | 2              | 18    | 73     |       |
| Jefferson  |                             |       |        |       | 3                        | 14    |        | 1     | 9              | 4     | 23     |       |
| Jerome     | 3                           | 14    | 1      | 1     | 6                        | 43    | 1      | 2     | 2              | 71    | 13     | 131   |
| Kootenai   | 19                          | 64    | 11     | 76    | 12                       | 39    | 10     | 31    | 4              | 16    | 56     | 226   |
| Latah      | 13                          | 88    | 8      | 26    | 4                        | 7     | 4      | 56    | 4              | 11    | 33     | 188   |
| Lemhi      |                             |       |        |       | 1                        | 2     |        |       |                | 1     | 2      |       |
| Lewis      | 6                           | 19    |        |       | 3                        | 13    | 1      | 20    |                | 10    | 52     |       |
| Lincoln    |                             |       |        |       | 2                        | 7     |        |       |                | 2     | 7      |       |
| Madison    |                             |       |        |       | 14                       | 121   | 1      | 18    | 5              | 25    | 20     | 164   |
| Minidoka   |                             |       | 2      | 10    | 1                        | 19    |        | 2     | 14             | 5     | 33     |       |
| Nez Perce  | 6                           | 21    |        |       | 1                        | 3     | 1      | 6     |                | 8     | 30     |       |
| Owyhee     | 1                           | 1     |        |       | 15                       | 121   |        |       |                | 16    | 122    |       |
| Oneida     |                             |       |        |       |                          |       |        |       |                |       |        |       |
| Payette    | 1                           | 3     |        |       |                          |       |        |       |                | 1     | 3      |       |
| Shoshone   |                             |       | 3      | 8     | 7                        | 28    | 2      | 6     | 2              | 2     | 14     | 44    |
| Twin Falls |                             |       | 3      | 172   | 4                        | 8     |        | 1     | 1              | 8     | 181    |       |
| Teton      |                             |       |        |       | 1                        | 3     |        |       |                | 1     | 3      |       |
| Washington | 1                           | 4     |        |       | 1                        | 2     |        |       |                | 2     | 6      |       |
| Totals     | 84                          | 368   | 60     | 449   | 150                      | 1910  | 31     | 240   | 73             | 413   | 398    | 3400  |



## E. Work Done by Private Interests.

The work carried on by the private agencies within the state was done under the direction of C. H. Stillinger, Office of White Pine Blister Rust Control and for this reason the results of the private activities are not included in this report.

### RECOMMENDATIONS

Considering all the facts now available on the distribution of white pine blister rust in the West, it is evident that as far as Idaho is concerned the situation is far from encouraging. It should also be recognized that even though the entire state was quite thoroughly scouted without finding the blister rust, we are not yet certain that the disease is not within the borders of the state. The negative results from this year's scouting probably indicate that the disease if present, is not widely distributed.

The extent of the scouting in the State of Idaho is shown by the following data:

|     |   |        |
|-----|---|--------|
| (1) | Miles of road scouted.....                                  | 14,668 |
| (2) | Number of towns scouted.....                                | 468    |
| (3) | Number of towns in which black currants were inspected..... | 102    |
| (4) | Number of cultivated black currants inspected...            | 3,400  |
| (5) | Number of cultivated black currant plantings inspected..... | 398    |
| (6) | Number of wild Ribes inspected (estimated).....             | 6,747  |
| (7) | Number of planted white pines inspected.....                | 141    |
| (8) | Number of native white pines inspected.....                 | 1,540  |

|  |        |
|--|--------|
| Total number of pines and Ribes examined | 12,226 |
|--|--------|

With the exception of the white pine trees examined, both cultivated and native, which are confined with few exceptions to the northern half of the state, the scouting was general over the state. Every county was covered to a greater or less degree.

In spite of all this it is neither safe nor wise to preclude the possibility of the disease being within the state. It must also be apparent that even though the disease is not yet within the state that it is very important to locate it immediately after its entry.

It is felt therefore, that the present situation warrants the following recommendations:

1. That the scouting for and the inspection of cultivated black currants be continued the coming summer throughout the state.

2. That more information be gathered concerning the distribution of wild Ribes especially in the white pine types.





3. That the preliminary experiments dealing with the eradication of wild Ribes be continued.

4. That the scouting be continued in British Columbia especially north of the Idaho State Line and north of northeastern Washington.

5. That an executive committee be appointed composed of the Commissioner of Agriculture, Idaho State Department of Agriculture, who shall be the chairman of this committee; a representative of the School of Forestry, University of Idaho; a representative of the Idaho State Land Board; a representative of the North Idaho Forestry Association; and a representative of the Department of Plant Pathology, College of Agriculture, University of Idaho. Also that the chairman of this committee be recognized as the administrative head for all future work on white pine blister rust within the State of Idaho. In order that this committee may have some official recognition, it is suggested that it be designated by the Governor of the State of Idaho.

6. That the Idaho State Department of Agriculture request an appropriation of \$5,000.00 from the next session of the Idaho State Legislature, this appropriation to be used in the eradication of cultivated black currants and in the enforcement of quarantine regulation.

7. That an effort be made to have the next session of the Idaho State Legislature pass a law declaring cultivated black currants a nuisance and investing in the State Department of Agriculture, the power to destroy potentially dangerous host plants.

8. That the five north Idaho fire protective associations recognize the necessity of considering some protective measures against blister rust and that in pursuance of this policy, a White Pine Blister Rust Committee, composed of a member from each organization be appointed. The representative of the North Idaho Forestry Association on the State Executive Committee shall be the chairman of this committee.

9. That the present system of destroying cultivated black currants be continued by the Idaho State Department of Agriculture until the law proposed in Recommendation 7 is passed.

10. That as much additional cooperation be obtained from the Office of White Pine Blister Rust Control, the members of the North Idaho Forestry Association, University of Idaho and other sources as possible.

11. That three gateway plant inspection stations be established in the State of Idaho located at Sandpoint, Weiser and Pocatello.

12. That the White Pine Blister Rust Conference endorse these recommendations.



## AUXILIARY SCOUTING IN IDAHO

By C. R. Stillinger, Pathologist

The fire protective associations in Idaho are five in number.

1. Coeur d' Alene Protective Association.  
Huntington Taylor, Secy.-Treas., Coeur d' Alene, Idaho.  
Mr. W. J. Ross, Chief Fire Warden, St. Maries, Idaho.
2. Clearwater Protective Association.  
T. J. Humbird, President, Sandpoint, Idaho.  
Ben E. Bush, Vice President, Moscow, Idaho.  
Theo. Fohl, Secy.-Treas. and Chief Fire Warden, Orofino, Idaho.
3. Pend Oreille Protective Association.  
B. H. Hornby, President, Dover, Idaho.  
Ben E. Bush, Vice President, Moscow, Idaho.  
T. L. Greer, Secy.-Treas., Sandpoint, Idaho.  
J. R. Winnington, Chief Fire Warden, Sandpoint, Idaho.
4. Potlatch Protective Association.  
W. D. Humiston, Secy.-Treas., Potlatch, Idaho.  
Mr. Weisner, Chief Fire Warden, Elk River, Idaho.
5. South Idaho Timber Protective Association.  
H. C. Shellworth, Secy.-Treas., Empire Building, Boise, Idaho.

The first four associations are grouped into one association known as the North Idaho Forestry Association of which Mr. Laird is President and Mr. W. D. Humiston, Secretary-Treasurer, both located at Potlatch, Idaho.

At a meeting of the North Idaho Forestry Association on June 12th and 13th the matter of cooperative blister rust scouting was discussed with the chief fire wardens for each one of these associations.

|                 |                       |                                  |
|-----------------|-----------------------|----------------------------------|
| Mr. Weisner,    | Chief Fire Warden for | Potlatch Protective Association. |
| Mr. Ross,       | " " " "               | Coeur d'Alene "                  |
| Mr. Winnington, | " " " "               | Pend Oreille "                   |
| Mr. Fohl,       | " " " "               | Clearwater "                     |

As a result the following procedure was agreed upon:

1. Enough literature consisting of a poster, five report forms and instructions were to be supplied to each fire warden for distribution among his men. Each warden was to issue a circular letter to accompany this literature as it was distributed to his men.

2. Circular 226 was to be sent out later in the summer accompanied by a letter giving a summary of the blister rust situation up to that date.





3. Specimens of the disease on Ribes and pines were to be sent to fire wardens.

4. A Blister Rust man, Mr. Brown, was to make a preliminary survey early in the season of the headquarters of each association, meeting as many as possible of the men in headquarters and in large field parties.

5. Later Mr. Brown was to scout in the district from station to station and interview the men at each station.

In the case of the South Idaho Timber Protective Association the matter was taken up by letter with Mr. Shellworth. Since most of the territory of this association was in yellow pine type no educational work was done in this organization with the exception of the distribution of Bulletin 226. It will be desirable to develop interest in the problem in this organization during the next season.

Table I shows the literature, specimens, and circular letters that have been distributed to these organizations and the dates of distribution. Circular letters and forms are referred to as exhibits. These exhibits are attached at the end of the report.

Table II shows the places and distances scouted, the numbers of men in the organizations and others with whom blister rust has been discussed and the dates of the interviews.



TABLE 1.

## Distribution Information, Interviews and Results.

|  | : | : | : | : | Blister | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | :</ |
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\*While few specimens have been sent in from these associations, many specimens have been referred to the local Blister Rust men, Forest Service officials or state officials so that the recorded reports in this table do not represent a true criterion of the results of the cooperative work done by these organizations.



TABLE II.

## Interviews and Scouting in Idaho Protective Associations

|                | Location   | No. Men Instructed  | Date     | Distance Scouted<br>in Miles from<br>Point to Point |
|----------------|--|---------------------|----------|---|
| Clearwater     | Orofino  | 1 Fire Warden       | July 19: | 0 Miles   |
|                | Headquarters   |                     | " 20:    | 12 "  |
|                | Bertha Hill  | 6 Smoke Chasers     | " 20:    | 20 "  |
|                | Dead Horse   | 3 " "               | " 21:    | 12 "  |
|                | " "  | 8 Cruisers          | " 21:    |   |
|                | Schofield  | 3 Smoke Chasers     | " 22:    | 7 "   |
|                | "  | 35 Fire Fighters    | " 22:    |   |
|                | Dull Axe   | 2 Smoke Chasers     | " 23:    | 7 "   |
|                | Headquarters   | 4 Smoke Chasers     | " 24:    | 24 "  |
|                | John Lewis Lookout   | 4 Cruisers          | " 24:    | 24 "  |
|                | Shanghai   | 3 Smoke Chasers     | " 25:    | 16 "  |
|                | Bald Mountain  | 3 " "               | " 26:    | 24 "  |
| Total:         |  | 9                   | 72       | 148 "   |
| Coeur d' Alene | St. Maries   | 1 Warden            | " 3:     | Vicinity of town                                    |
|                | " "  | 1 " "               | Aug. 9:  | " " "   |
|                | Santa  | 3 Smoke Chasers     | " 10:    | 14 Miles  |
|                | Crystal Creek  | 3 " "               | " 11:    | 20 "  |
|                | Fernwood   | 2 " "               | " 12:    | 8 "   |
|                | "  | 1 Patrolman         | " 13:    | 6 "   |
|                | Clarkia  | 5 Patrolmen         |          | 16 "  |
|                | "  | 3 Cruisers          | " 14:    | 16 "  |
|                | "  | 3 Camp Foremen      |          |   |
|                | "  | 1 Patrolman         | " 15:    | 24 "  |
|                | "  | 4 Lumbermens' Camps | " 15:    | 14 "  |
|                | "  | 2 Cruisers          | " 16:    | Vicinity of town                                    |
|                | St. Maries   | 1 Foreman           | " 16:    | " " "   |
| Total:         |  | 4                   | 30       | 102 Miles   |
| Potlatch       | Elk River  | 1 Warden            | July 1 : | 12 "  |
|                | " "  | 1 Warden            | Aug. 19: |   |
|                | Elk Butte  | 2 Smoke Chasers     | " 20:    | 12 "  |
|                | Upper Basin  | 2 " "               | " 21:    | 12 "  |
|                | Hemlock Butte  | 1 " "               | " 22:    | 19 "  |
|                | Stony Creek  | 2 " "               | " 23:    | 7 "   |
|                | Freezeout  | 3 " "               | " 23:    | 7 "   |
|                | Cold Center  | 1 " "               | " 24:    | 15 "  |
|                | Catspur  | 2 " "               | " 25:    |   |
| Total:         |  | 9                   | 14       | 84 "  |
| Pend Oreille   | Sandpoint  | 1 Warden            | July 6 : |   |
|                |  |                     | and 13 : |   |
|                | Association was assigned to Dr. Schnitz but lack of time prevented accomplishment of work. |                     |          |   |
|                |  |                     |          |   |
|                |  |                     |          |   |





The Blister Rust man who was doing the personal work in the field carried with him specimens of the disease on currant leaves and on pine as well as pictures of the disease. The work he endeavored to accomplish may be grouped under six main heads as follows:

1. Show the men specimens of the disease and explain its life history and seriousness.
2. Teach the men how to look for the disease.
3. Instruct the men how to identify the local gooseberries and currants from other plants.
4. Scout for the disease from point to point in the associations.
5. Collect and make records of the wild currants and gooseberries he observed on the association land. (Table III.)
6. "Sell" Blister Rust to all parties with whom he came in contact.

These objects have been accomplished chiefly by walking from point to point in each organization, scouting along the way, and working with the men at each point.

The work as accomplished in each association is given under each organization in Table II.

Regarding the effectiveness of the personal contact, Mr. Brown, who did most of the work, says, "While the posters mildly interested the men, many of them expressed themselves as being on the lookout for something they knew nothing about, and which they didn't believe they could recognize if they did see it. However, after actual diseased specimens were shown to these men and the life history and economic importance of the disease made plain to them, most of them became really interested and willing to cooperate in scouting work. The majority of these association men cover the territory assigned them very thoroughly during a fire season and if the disease is anywhere in their territory they will find it."

"Blister rust," says Mr. Brown, "was 'sold' to many others besides the association field men; in fact, to everyone who could be interested and especially to everyone who worked or travelled thru the woods and who could be reached and to those who were interested in the preservation of white pine. Such men included lumbermen, loggers, camp foremen, lumberjacks, timber cruisers, Forest Service men, fire fighters, homesteaders, etc."

Besides educational work among the men much valuable scouting was done. The immediate vicinity around each locality visited (Table II) was scouted and as shown in the table 148 miles in the Clearwater Protective Association and 84 miles in the Potlatch Timber Protective Association, and 102½ miles in the Coeur d'Alene Timber Protective Association was scouted by walking.

Further, during the course of his scouting much valuable information was obtained regarding the native currants and gooseberries. The location and abundance of the wild currants and gooseberries as reported by this scout are given in Table III.



TABLE III.

Wild Ribes Distribution in Timber Protective Associations.

| R. petiolare       | : | R. viscosissimum: | : | R. lacustre       | : | G. irrigua |
|--------------------|---|-------------------|---|-------------------|---|------------|
| Schofield (va)*    | : | Schofield (a)**   | : | Schofield (a)     | : |            |
| Dull Axe (va)      | : |                   | : | Dull Axe (va)     | : |            |
| Headquarters (a)   | : |                   | : | Headquarters (a)  | : |            |
| Bertha Hill (a)    | : |                   | : | Bertha Hill (a)   | : |            |
|                    | : | Dead Horse (va)   | : | Dead Horse (va)   | : |            |
| Pierce (a)         | : | Pierce (a)        | : | Pierce (va)       | : |            |
| Clarkia (va)       | : | Clarkia (a)       | : | Clarkia (va)      | : |            |
| Emerald Creek (a)  | : |                   | : |                   | : |            |
| Fernwood (va)      | : | Fernwood (a)      | : | Fernwood (va)     | : |            |
| Crystal Creek (va) | : | Crystal Creek (a) | : | Crystal Creek (a) | : |            |
|                    | : |                   | : | Santa (a)         | : | Santa (a)  |
| Elk River (a)      | : | Elk River (va)    | : | Elk River (va)    | : |            |
| Hemlock (a)        | : | Hemlock           | : | Hemlock (va)      | : |            |
|                    | : |                   | : | Elk Butte (va)    | : |            |

\* va - very abundant.

\*\* a - abundant.





STATEMENT OF COOPERATIVE BLISTER RUST WORK DONE BY THE IDAHO  
PROTECTIVE ASSOCIATIONS IN ANSWER TO QUESTIONNAIRE

The foregoing report of the activities of the members of the Office of Blister Rust Control, U. S. Department of Agriculture, in endeavoring to train the members of the different protective associations, was sent to the secretary of each of the associations. At the same time the following letter and questionnaire was sent to them. The answers of each secretary to each question follow each question. P. P. A. means Potlatch Protective Association; C. P. A., Clearwater Protective Association; C. D. P. A., Coeur d'Alene Protective Association; P. D. P. A., Pend d' Oreille Protective Association.

October 12, 1922.

-----Secy.-Treas.,  
-----Protective Association,  
-----, Idaho.

Dear Mr. -----:

I am inclosing a report of the cooperative blister rust scouting in the Idaho Protective Associations. I have shown the efforts which have been put forth by this office to instruct these men so that they could scout intelligently for the disease.

I wish at this time to determine the results of our work and whether this type of work should be continued and how. Only the men in charge of each organization can state what scouting by the men in their organization has been done and can give an estimate of this type of work.

I would like to know:

1. The number of men in each organization this summer.

P. P. A. Regular protective force, not including emergency fire fighters, packers, extra clerks, etc., employed by this association during the season of 1922, as follows: Month of June, 35 men; July 55; August, 60; September 1 to 15, 50; September 1 to October 15, 30.

C. P. A. 45 to 50.

C. D. P. A. Not answered.

P. D. P. A. 18 men.

2. The number of men who have actually done scouting for the disease.

P. P. A. About 40 of our regular employees did actual scouting for Blister Rust in connection with their other work.



C. P. A. All regular force when not actually engaged in fire fighting.

C. D. P. A. None.

P. D. P. A. Should estimate that 15 men were interested and on the lookout.

3. The number of days or hours that have been spent in Blister Rust work by these men.

P. P. A. None of our men were assigned exclusively to Blister Rust work, therefore the actual time spent on Blister Rust control alone was not recorded. Our total expenditure for wages and subsistence for the months of June, July, August and September, for our regular protective force only, which does not include emergency fire fighters or other temporary employees, were \$22,900. It is estimated that about 75 per cent of our regular employees did actual scouting for Blister Rust which leaves a total of \$17,175 expended in connection with Blister Rust control by this association.

C. P. A. Difficult to estimate. Average period of employment about three months and men were instructed to be on the watch.

C. D. P. A. Nothing done.

P. D. P. A. These 15 men were in the field 4 months or more under instructions to observe and report any suspicious cases.

4. Number of specimens or reports brought in by the men.

P. P. A. Four or five specimens of wild currant bushes were brought to the Fire Warden's office at Elk River by association employees. Unfortunately, during the stress of the fire season, these were destroyed and not submitted for your inspection.

C. P. A. None found. Verbal reports made at different times by the several employees.

C. D. P. A. None.

P. D. P. A. None that even approximated the indication of disease.

5. How thoroughly has the territory been scouted for the disease?

P. P. A. A considerable amount of our territory has been pretty thoroughly scouted, as will be seen by consulting the enclosed map.

C. P. A. Employees on watch for infection while performing regular work.

C. D. P. A. No scouting done.

P. D. P. A. Fairly well by untrained observers.



6. Number of acres in association. What parts have been scouted thoroughly, partly scouted or not scouted at all. Indicate on map.

P. P. A. There are approximately 800,000 acres within the territory of this association. See map for area scouted. (Map submitted.)

C. P. A. 703,000. Northern portion Twps. 37,38,39,40, Rgs. 3, 4, 5, 6, partially scouted in timber.

C. D. P. A. No report.

P. D. P. A. 700,000 acres, but only about 10% actually covered by patrolmen.

7. Effectiveness of the educational program as it has been carried out by this office.

P. P. A. Not having information as to just how effective the educational program has been as a whole, I can only say that it has served to arouse the interest of a good many who are in a position to render some assistance in Blister Rust control in this locality.

C. P. A. Work of Seattle office perfectly satisfactory.

C. D. P. A. No information.

P. D. P. A. Only in a general way. Not enough personal training by technical observers.

8. Circulars letters (copies) which have been distributed by the association to their men in an effort to have the men look for the disease.

P. P. A. All available posters, circulars, forms, etc., have been distributed among the men of our organization.

C. P. A. All copies of circular letters distributed in association area.

C. D. P. A. No answer. (Evidently sent out circular letter information that was forwarded to them from the Seattle office.)

P. D. P. A. 18.

9. Have any specific days been indicated when the men were to devote their time to scouting? How many days? How many men were instructed to scout?

P. P. A. In all, about forty men of our organization were instructed to scout for Blister Rust. No particular days were to be devoted to this work alone, but they were to do this when it would not seriously retard other protective measures.

C. P. A. No specific days but men were instructed to be continually on the lookout. All regular employees were told to watch for rust and to report.





C. D. P. A. None.

P. D. P. A. No, None. All our 15 patrolmen.

10. What suggestions have you regarding future work in these organizations?

P. P. A. We should continue our efforts to get as much assistance as possible from these organizations. At the beginning of each season when the men are hired and the work laid out, plans should be made to give both verbal and printed instructions and it should be easy to enlist the interest and cooperation of the men.

C. P. A. No suggestions as to improving efficient work already done.

C. D. P. A. No answer.

P. L. P. A. Keep up the general interest and yearly instructions. Results small but worth while.

11. Do you consider the efforts to use these organizations for this work as worth while or should it be discontinued?

P. P. A. While I do not believe in placing too much dependence upon these organizations, I think it well to continue to try them out.

C. P. A. Should be continued as much valuable information has been secured.

C. D. P. A. No answer.

P. D. P. A. It is good, but men are not technically trained so more education is needed.

12. Have you any criticism of the work; that is as to how better results could be obtained?

P. P. A. Better results could be obtained by sending at least one man, who is thoroughly acquainted with all phases of the work, to each association for at least a two months period, preferably during July and August, who could devote his entire time to the education of the men of these organizations along these lines.

C. P. A. No criticism, objects attained very satisfactory.

C. L. P. A. No reply.

P. D. P. A. Personal assistance was small in our association where infestation is most likely from Canada.

13. What future work should be carried out in your organization?

P. P. A. Our organization should do as much scouting as possible next



year and render what other assistance we can in connection with our regular fire protection.

C. P. A. As heretofore, eternal vigilance and prompt reports from men.

C. D. P. A. No reply.

P. D. P. A. More education, more help from trained observers.

Very truly yours,

C. R. Stillinger,  
Pathologist.

POTLATCH TIMBER PROTECTIVE ASSOCIATION

Potlatch, Idaho,  
October 26, 1922.

Mr. C. R. Stillinger, Pathologist,  
U. S. Department of Agriculture,  
Bureau of Plant Industry,  
Blister Rust Control,  
429 Lyon Building,  
Seattle, Washington.

Dear Sir:

This will acknowledge and thank you for your letter of October 12 enclosing report of cooperative blister rust scouting in the Idaho Protective Associations. Mr. Humiston, to whom your letter was addressed, is, and for several days has been, very ill and unable to make reply to your communication, but requested Mr. R. L. Woesner, our Chief Fire Warden, to answer your questionnaire, which he has done in the following numerical statements:

(Statements incorporated under each question.)

In conclusion, wish to say that during the season several of our men have reported such diseases as "velvet top fungus", "Indian paint fungus", etc., as Blister Rust, which indicates that they were at least on the lookout for it. For this reason, I would like to suggest that next year someone thoroughly familiar with tree diseases be assigned for a considerable time to each association to acquaint these men with the different tree diseases.

Very truly yours,

A. W. Laird,

President.





CLEARWATER TIMBER PROTECTIVE ASSOCIATION

Orofino, Idaho,  
November 12, 1922.

C. R. Stillinger, Pathologist,  
U. S. Department of Agriculture,  
Seattle, Washington.

Dear Sir:

Letter regarding Blister Rust was mislaid in my desk while I was out in woods and found on my return. I have been quite busy since fire season closed cruising fire areas and have been absent from office considerable of time. Am sending answers to your inquiries and will further say that we have had considerable correspondence with different parties regarding blister rust matters.

We requested our congressional representative at Washington to support H. B. 9882 and S. B. 2924 making appropriation for the further investigation and control of this timber infection. Much valuable work has been done by your department and the different associations have carefully watched the woods for the appearance of this devastating timber disease. So far there has been no discovery of Blister Rust in this section and we hope with the good work so far done we will be able to prevent its appearance in this locality.

We thank you for efficient work already done.

Respectfully,

Theo Pohl,  
Secretary.

COEUR D' ALENE TIMBER PROTECTIVE ASSOCIATION

Coeur d' Alene, Idaho,  
November 15, 1922.

Mr. C. R. Stillinger, Pathologist,  
U. S. Department of Agriculture,  
429 Lyon Building,  
Seattle, Washington.

Dear Sir:

We have your letter of November 10.

Perhaps you know that we had one of the most disastrous and expensive fire seasons in 1922 that we have ever encountered. On this account it was absolutely impossible to get anything done on blister rust control



work, and we would not have any information to supply in your questionnaire of October 12.

Very truly yours,

Huntington Taylor,  
Secretary-Treasurer.

PERD D' ONEILL TIMBER PROTECTIVE ASSOCIATION.

Sandpoint, Idaho,  
October 30, 1922.

Mr. C. R. Stillinger, Pathologist,  
429 Lyon Building,  
Seattle, Washington.

My dear Mr. Stillinger:

We have your questionnaire together with other information concerning the work done this past season on White Pine Blister Rust Control. I have thought it simpler and easier to try and answer the questionnaire on the paper submitted. I trust that you will be able to make out same, as well as get the information you desire.

As you know we had very little attention given us by your field men and he was unable at the time that he was here to get in contact with our patrolmen. Our chief Fire Warden, Mr. J. D. Winington, however took the matter up with them individually and at various opportune times, as well as putting circular letters, etc., in their hands.

We had approximately eighteen men in continuous service for four months and a half and while these men did not give any specific time to research work at scouting, they did carry that in their mind during the summer work, and at opportune times made such investigations as the ordinary untrained observer would make, passing through their forest on their daily patrol work. The great question that presents itself to me, is whether these men are technically trained efficiently enough, to make real worth while observations. They undoubtedly know enough of the forest and forest conditions to appreciate the infestation when it is once apparent. To the untrained eye, they undoubtedly would make note of this and I think that has been perhaps the greatest good of the work the past season, is getting the public to realize the necessity of close observation and cooperation with you and your department in this work.

I do not believe that you will find anyone at all well read or observing in this part of the country, who has not heard of the White Pine Blister Rust and realizes somewhat of its suppression being important. Our patrolmen ordinarily are more or less experienced workmen and are not botanists in any sense of the term. We are unable to get that class of men in this work and perhaps they would not answer our purpose if they were so trained, ordinarily speaking. I am afraid that these men would find it



difficult to identify the various species of gooseberries and currants found in our forests. While in a general way they know them, I do not believe that they could identify them.

Actual detection of the disease will undoubtedly be made by men, who are trained for that purpose. I trust that next season it will be opportune for you to get men in here, who will give our patrolmen better instructions and get them to take a more personal interest in this matter.

To my mind the north panhandle of Idaho is the most vulnerable portion of our white pine forests, abutting as it does on to Canada and the source of infestation that we most reasonably expect.

Wishing you success in your work and assuring you of our hearty cooperation at all times and asking that you notify me if I can furnish you further information, I remain,

Yours very truly,

Pend d' Oreille Timber Protective Ass'n.

By T. L. Greer,  
Secy.-Treas.





UNITED STATES DEPARTMENT OF AGRICULTURE  
Office of Blister Rust Control,  
429 Lyon Bldg., Seattle, Washington.

INSTRUCTIONS FOR FILLING OUT BLISTER RUST REPORT

I. Wild Currents, Gooseberries and White Pine.

A. Species. The particular kind of plant may be determined in either of two ways:

1. Indicate the specimen by a number and submit a specimen for that number so that the species can be determined.
2. Send in specimens with a number, the collector keeping a duplicate specimen bearing that number.

Prompt determinations will be made and reported back.

B. No. per acre. Make a count on an acre plot if possible. Other wise estimate.

C. Location. Give by Section (Sec.), township (Tp.) and Range (R). Plot the areas on a township map if you have one and submit with your report.

D. Type of locality, swamp, stream, mountain, sloping east, west, north, or south, elevation.

E. Tree Association. Indicate the fields of trees that grow nearby.

F. Burn, Logged-off, or Natural State. Give age of burn or how long since being logged or whether in a virgin forest.

G. Diseased with Blister Rust. If you find anything that looks like the disease, state so in this column and send in specimens.

II. Cultivated Currents, Gooseberries, Black Currents, and Planted White Pine. Any of these plantings may have been imported from a disease infected area and consequently may be the cause of introducing the disease. Inspect those at farms in your district, deserted places, and mining camps. Watch especially for planted white pine and the cultivated black currants. Inspect them very carefully.

A. Location. Give the owner's name and address if possible and the location of the plants. If located in a town, give the location as accurately as possible. If at a deserted place, indicate township, section and range.

B. No. of plants in the planting. Indicate the number of plants of each kind that you find in the planting.

C. No. of plants diseased with B. R. Examine the plants carefully and report the number that appear to be diseased. Send in specimens of everything that may be the disease.



## FORM REPORT FOR BLISTER RUST CONTROL BY COOPERATING AGENCIES

STATE OF \_\_\_\_\_ COUNTY OF \_\_\_\_\_ DATE \_\_\_\_\_ 192\_\_\_\_\_

## WILD CURRANTS, GOOSEBERRIES AND WHITE PINE

[illegible]

BY WHOM REPORTED.

SEE OTHER SIDE

ADDRESS.

**Cultivated Currants (Cu.) Gooseberries (Gb.) Black Currants (Bl. Cu.) and Planted White Pine.**

[illegible]

REMARKS:





UNITED STATES DEPARTMENT OF AGRICULTURE  
Bureau of Plant Industry

Blister-Rust Control,  
429 Lyon Building,  
Seattle, Washington.

Dear Sir:

I wish to report what has recently been learned concerning the white pine blister rust in the Pacific Coast regions and urge your further assistance in preventing this disease becoming a serious menace to our western white and sugar pine forests.

This destructive disease of the white pines was found for the first time in western North America late last fall when it was discovered at several points in southwestern British Columbia and northwestern Washington. Extensive scouting by the Canadian authorities during the present season shows that this disease is well established in British Columbia west of the Cascade Mountains and that it has already caused serious damage to the pines which have been infected for several years. Similar scouting by state and federal men indicates that it is rapidly spreading southward through western Washington.

Until recently it was believed that the disease had not spread to points east of the Cascades. However, last week it was found on cultivated English black currants and native white pines in the vicinity of Revelstoke and Beaton, B. C. These points are only about one hundred miles north of the international boundary and are in the northern edge of the great western white pine area which extends into Washington, Idaho, and Montana. It is now evident that the disease is spreading rapidly and unless hurriedly checked it will in a short while be established in the Inland Empire white pine stands. The disease has also recently been found on English black currants in the southwestern corner of Pacific County, Washington. This indicates a rapid southern spread along the coast region and directly threatens the sugar pine stands of Oregon and California.

In order to check the spread of the blister rust it is necessary to determine the extent of its present distribution immediately. At this season of the year it is most easily detected on the leaves of currant and gooseberry bushes. The English black currant is most susceptible and if carefully inspected now would very likely show the disease if it is present in the locality. You can help a great deal by examining the leaves of the currants and gooseberries in your locality, especially the English black currant leaves, and sending specimens of suspicious material to the state experiment station or to this office for identification.

During the second week of school this fall, school children are being asked to devote some time to looking for the disease. You may be able to help make this auxiliary scouting effective by giving the subject publicity in your local newspapers and by urging the local school authorities to make the campaign as thorough as practicable. In this way you can help very materially in our fight to protect the western white pine forests from a very serious pest. We will greatly appreciate your energetic efforts in this matter.

In case you have not already received adequate information concerning the blister rust and its destructiveness in other pine regions advise me and I will send you bulletins and illustrations.

yours very truly, C. R. Stillinger



BRIEF SUMMARY OF THE SCHOOL CAMPAIGN IN IDAHO.

|      |  |      |
|------|--|------|
| I.   | Number of teachers to whom the school program was sent--               | 4002 |
| II.  | Number of reports received from teachers-----                          | 1079 |
| III. | Scouting.  |      |
|      | Number of towns to be scouted-----                                     | 497  |
|      | Number of towns scouted-----   | 344  |
| IV.  | Location of white pines.   |      |
|      | Number reporting white pine present, either native or<br>planted,----- | 55   |
|      | Number of planted white pine located-----                              | 607  |
|      | Number of specimens of white pine sent in-----                         | 0    |
| V.   | Location of Ribes other than black currants.                           |      |
|      | Number reporting Ribes present-----                                    | 255  |
|      | Number of Ribes specimens other than black currants<br>sent in-----    | 119  |
| VI.  | Location of black currants.  |      |
|      | Number reporting black currants present-----                           | 95   |
|      | Number of black currant plants reported (173 plantings)-               | 2012 |
|      | Number of black currant specimens sent in-----                         | 8    |
| VII. | Total number of specimens of all kinds sent in-----                    | 171  |

1. The purpose of this document is to provide information regarding the activities of the [redacted] and the [redacted] in the [redacted] area. This information is being provided to you for your information only. It is not to be used for any other purpose.

2. The [redacted] and the [redacted] are both active in the [redacted] area. They are both active in the [redacted] area and are both active in the [redacted] area. They are both active in the [redacted] area and are both active in the [redacted] area.

3. The [redacted] and the [redacted] are both active in the [redacted] area. They are both active in the [redacted] area and are both active in the [redacted] area. They are both active in the [redacted] area and are both active in the [redacted] area. They are both active in the [redacted] area and are both active in the [redacted] area.

4. The [redacted] and the [redacted] are both active in the [redacted] area. They are both active in the [redacted] area and are both active in the [redacted] area. They are both active in the [redacted] area and are both active in the [redacted] area. They are both active in the [redacted] area and are both active in the [redacted] area.

5. The [redacted] and the [redacted] are both active in the [redacted] area. They are both active in the [redacted] area and are both active in the [redacted] area. They are both active in the [redacted] area and are both active in the [redacted] area. They are both active in the [redacted] area and are both active in the [redacted] area.

## BLISTER RUST SCHOOL CAMPAIGN IN IDAHO - FALL 1922.

I. Purpose: The object of the school campaign has been as follows:

- A. Inform the public regarding the blister rust.
- B. Use the teachers and school children as an auxiliary scouting force.
  - 1. To look for the disease and send in specimens of anything that resembled it.
  - 2. To report the location of planted black currants.
  - 3. To report the location of planted white pine.

## II. Conferences.

On July 8 the matter of a blister rust school campaign in Idaho was taken up with the State Department of Public Instruction. In the absence of the Superintendent of Public Instruction the scheme was discussed with Miss Martin, the assistant. The program as shown in Exhibits 1 to 8 was submitted to her and left for the consideration of Miss Redfield.

A conference was held with the State Department of Agriculture regarding the matter. They approved of the plan, but due to lack of funds were unable to take an active part in the program since they had no inspectors employed at that time. Hence, section four of Exhibit 1 was not carried out.

The matter was taken up with the head of the Idaho Extension Division, Mr. Fluharty. He approved the plan and called to the attention of all the members of his organization the blister rust problem and the school campaign advising them to give as much publicity to the matter as possible.

Mr. C. W. Hungerford, Pathologist of the Agricultural College likewise gave his approval of the plan.

As a result of these conferences the plan as it concerned the detailed relationship with the State Department of Education was outlined and submitted to Miss Redfield on July 20. On July 26, Miss Redfield, after considering the general plan, Exhibits 1 to 8 agreed to the plan of cooperation. She wrote at that time: "We are glad to cooperate with you in this important work." The following is the cooperative agreement between the Idaho State Department of Public Instruction and the Office of Blister Rust Control.

### COOPERATIVE AGREEMENT BETWEEN THE STATE DEPARTMENT OF PUBLIC INSTRUCTION OF IDAHO AND THE OFFICE OF BLISTER RUST CONTROL, UNITED STATES DEPARTMENT OF AGRICULTURE.

- 1. Miss Redfield to be made collaborator with Bureau of Plant Industry.



1. Subject: The subject of this report is the activities of the [redacted] in the [redacted] area.

2. Inform the public regarding the activities of the [redacted] in the [redacted] area.

3. Use the results of the investigation to [redacted] the [redacted] in the [redacted] area.

4. To [redacted] the [redacted] in the [redacted] area.

5. To report the results of the investigation to the [redacted] in the [redacted] area.

6. To report the results of the investigation to the [redacted] in the [redacted] area.

1. Summary:

The [redacted] of the [redacted] in the [redacted] area [redacted] the [redacted] of the [redacted] in the [redacted] area. The [redacted] of the [redacted] in the [redacted] area [redacted] the [redacted] of the [redacted] in the [redacted] area. The [redacted] of the [redacted] in the [redacted] area [redacted] the [redacted] of the [redacted] in the [redacted] area.

A [redacted] was [redacted] in the [redacted] area [redacted] the [redacted] of the [redacted] in the [redacted] area. The [redacted] of the [redacted] in the [redacted] area [redacted] the [redacted] of the [redacted] in the [redacted] area. The [redacted] of the [redacted] in the [redacted] area [redacted] the [redacted] of the [redacted] in the [redacted] area.

The [redacted] was [redacted] in the [redacted] area [redacted] the [redacted] of the [redacted] in the [redacted] area. The [redacted] of the [redacted] in the [redacted] area [redacted] the [redacted] of the [redacted] in the [redacted] area. The [redacted] of the [redacted] in the [redacted] area [redacted] the [redacted] of the [redacted] in the [redacted] area.

The [redacted] of the [redacted] in the [redacted] area [redacted] the [redacted] of the [redacted] in the [redacted] area. The [redacted] of the [redacted] in the [redacted] area [redacted] the [redacted] of the [redacted] in the [redacted] area. The [redacted] of the [redacted] in the [redacted] area [redacted] the [redacted] of the [redacted] in the [redacted] area.

As a result of the [redacted] in the [redacted] area [redacted] the [redacted] of the [redacted] in the [redacted] area. The [redacted] of the [redacted] in the [redacted] area [redacted] the [redacted] of the [redacted] in the [redacted] area. The [redacted] of the [redacted] in the [redacted] area [redacted] the [redacted] of the [redacted] in the [redacted] area.

The [redacted] of the [redacted] in the [redacted] area [redacted] the [redacted] of the [redacted] in the [redacted] area. The [redacted] of the [redacted] in the [redacted] area [redacted] the [redacted] of the [redacted] in the [redacted] area. The [redacted] of the [redacted] in the [redacted] area [redacted] the [redacted] of the [redacted] in the [redacted] area.

It is recommended that [redacted] be made [redacted] in the [redacted] area. The [redacted] of the [redacted] in the [redacted] area [redacted] the [redacted] of the [redacted] in the [redacted] area. The [redacted] of the [redacted] in the [redacted] area [redacted] the [redacted] of the [redacted] in the [redacted] area.

2. Miss Redfield to sign letter to teachers (print, stamp, or sign.) This letter to be sent with form to teachers.
3. Miss Redfield on September 1 will send a letter to county superintendents urging their support and requesting as complete a list of the teachers in their county as they have.
4. F. A. Brown to be located in space provided by the Extension Service, Capital Building, Boise, Idaho for the following purposes:
  - A. To compile mailing list of teachers.
  - B. To manage mailing out of material so that it will reach teachers at end of first school week.
  - C. To handle the replies as follows:
    1. Check the replies that are received.
    2. Send out post card requesting reports, bearing Miss Redfield's signature, in cases where no reports are received.
    3. Send out post card bearing Miss Redfield's signature acknowledging receipt of report.
    4. Take care of specimens and at end of work refer them to Professor W. C. Hungerford, Experiment Station, University of Idaho, Moscow, Idaho. The specimens will be examined by Mr. Hungerford and a report compiled for Mr. Stillinger. Mr. Brown will aid Mr. Hungerford in this work.
5. All correspondence and circular letters to teachers will be signed by Miss Redfield.
6. In addition to Miss Redfield's efforts the Extension Service will issue a circular letter to the officers of their organization requesting them to give publicity to the campaign among teachers and the general public.
7. Entire program will be supervised from the Seattle office and the details directed by Mr. Stillinger.

### III. Summary of Procedure Followed.

1. Campaign was carried on from September 1 to November 15, 1922.
2. Miss Ethel Redfield, Superintendent of Public Instruction has been made a collaborator of the Office of Blister Rust Control, Bureau of Plant Industry, U. S. Department of Agriculture.
3. Mr. F. A. Brown, located in quarters provided by the State Extension Service, Capital Building, Boise, Idaho has been in immediate charge of details of the work.
4. In order to familiarize the county superintendents with the proposed school campaign and blister rust as well as to secure their endorsement, a letter

1. The first condition is that the person must be a citizen of the United States.

2. The second condition is that the person must be at least 21 years of age.

3. The third condition is that the person must be a resident of the State in which he is seeking citizenship.

4. The fourth condition is that the person must be of good moral character.

5. The fifth condition is that the person must be able to read, write, and understand the English language.

6. The sixth condition is that the person must be a native born citizen of the United States.

7. The seventh condition is that the person must be a native born citizen of the United States.

8. The eighth condition is that the person must be a native born citizen of the United States.

9. The ninth condition is that the person must be a native born citizen of the United States.

10. The tenth condition is that the person must be a native born citizen of the United States.

11. The eleventh condition is that the person must be a native born citizen of the United States.

12. The twelfth condition is that the person must be a native born citizen of the United States.

13. The thirteenth condition is that the person must be a native born citizen of the United States.

THE DEPARTMENT OF JUSTICE

14. The fourteenth condition is that the person must be a native born citizen of the United States.

15. The fifteenth condition is that the person must be a native born citizen of the United States.

16. The sixteenth condition is that the person must be a native born citizen of the United States.

17. The seventeenth condition is that the person must be a native born citizen of the United States.



(Exhibit 10) together with literature and a sample of the school program was sent to each county superintendent on August 3 explaining the proposition and asking for their cooperation by signing an enclosed form letter (Exhibit 11) which could be enclosed with the school programs that were distributed to the teachers in that county.

5. On September 1 a letter (Exhibit 12) was sent to all county superintendents by Miss Redfield requesting that a list of the teachers of that county be forwarded at once to Mr. Brown.

6. On September 11 a second letter (Exhibit 13) was sent to those counties which had not sent in their list of teachers.

7. As the lists began to arrive, it became evident that the county superintendents were not including the lists for independent school districts, consequently, on September 11 a letter (Exhibit 14) was sent to all city superintendents of Class A, independent school districts requesting them to send in a list of their teachers.

8. Since some of the city superintendents were slow in sending in their lists, on September 21, another letter (Exhibit 15) was sent to all those who had not sent in the names of their teachers.

9. A few county lists still had not been received, hence, on September 23, a wire (Exhibit 16) was sent to each of these.

10. On September 28, a wire (Exhibit 17) was sent to all city superintendents who had not sent in their lists.

11. The school program that was forwarded to each teacher consisted of the following:

- 1 Blister Rust Poster
- 1 Letter to teachers signed by state superintendent of Public Instruction (Exhibit 9)
- 1 Letter of indorsement from county superintendent, if an indorsement was received, (Exhibit 11)
- 2 Teacher's report forms (Exhibit 5)
- 1 Bulletin 226 with enclosed circular (Exhibit 6)
- 1 Large manilla envelope 8 x 10<sup>1</sup>/<sub>2</sub>" addressed to State Superintendent of Public Instruction, Boise, Idaho

12. As each report was received from a teacher, a card of acknowledgment (Exhibit 18) was sent to that teacher.

13. After due time if a report had not been received from a teacher, a post card (Exhibit 19) reminding her of the fact was sent.

14. After sufficient time had elapsed for a reply in response to the first post card which was sent out (Exhibit 19) a second post card (Exhibit 20) was sent. This latter post card was not sent out in all cases due to the exhaustion of the supply of post cards. If no reply was received in response





to these efforts, no further steps were taken.

15. All correspondence has been under the signature of Miss Redfield, State Superintendent of Public Instruction.

16. Specimens were examined by Mr. Brown of the Office of Blister Rust Control and by Dr. Schmitz of the Forestry School, University of Idaho.

#### IV. Cooperation.

The State Department of Public Instruction has cooperated in every way within their means. Besides providing a great deal of information and advice regarding many points, they have used every means possible to make the campaign a success.

The Idaho Extension Service has provided during the entire campaign a desk, typewriter, mimeograph, some clerical help and a small room for the storing and preparation of supplies. This cooperation meant a great deal to us since no space or facilities were available either in the State Department of Education or the State Department of Agriculture.

#### V. Acquisition of Lists of Teachers.

Our inability to secure complete lists of teachers has been the greatest handicap that has been encountered in developing the school campaign. This was due to the fact that the schools started at various periods from September 4 until the middle of October. Further, county superintendents in many cases do not receive these lists complete until the schools have been in progress sometime, and consequently, it required special effort on their part to complete the lists. It was necessary to get the literature to the teachers at as early a date as possible due to the fact that the Ribes leaves are shed very early.

The first letter requesting the lists of teachers from the county superintendents was sent out on September 1 (Exhibit 12.) This letter explained briefly what was proposed to be done, and requested the cooperation of the county superintendents by sending in immediately a list of their teachers even though incomplete. However, by September 11 only eleven lists had been received.

A second letter was sent out September 12 (Exhibit 13) to the thirty-three county superintendents who had not sent in lists. As a result of this letter sixteen additional lists were secured by September 23.

As a final effort to secure the lists from the remaining seventeen counties, on September 23 a telegram (Exhibit 16) was sent to the county superintendents of these counties. By October 10 partial lists had been received from all counties.

As the lists began to arrive, it became evident that some of the county superintendents' lists did not include the names of the teachers of independent school districts. In fact, only two counties included these lists.

$\frac{d}{dt} \left( \frac{\partial L}{\partial \dot{x}} \right) = \frac{\partial L}{\partial x}$

• position •

... to state to individual...



Consequently, on September 11 a letter (Exhibit 14) was sent to the superintendents of the other thirty-one independent school districts. On September 21 a second letter (Exhibit 15) was sent to the twenty-one superintendents of schools who had still not sent in lists. On September 28 a telegram (Exhibit 17) was sent to the nine superintendents of schools who had not submitted lists. By October 2 all incomplete lists from independent school districts had been received. Table I gives an analysis of the school campaign in the independent school districts.

TABLE I. IDAHO SCHOOL CAMPAIGN (INDEPENDENT SCHOOL DISTRICTS)

| COUNTY     | TOWN            | Receipt of Lists of Teachers |      |                 |      |                 |      | Replies        |       |       |
|------------|-----------------|------------------------------|------|-----------------|------|-----------------|------|----------------|-------|-------|
|            |                 | No. of Teachers              | Date | No. of Teachers | Date | No. of Teachers | Date | No. of Replies | Date  | Total |
|            |                 |                              |      |                 |      |                 |      |                |       |       |
| Power      | American Falls* | 25                           | 9-23 | 24              | 9-11 | 9-21            |      | 2              | 22    | 8     |
| Ada        | Boise           | 179                          | 9-22 | 151             | "    | "               |      | 0              | 151   | 53    |
| Bingham    | Blackfoot       | 50                           | 9-15 | 39              | "    | "               |      | 0              | 39    | 6     |
| Boundary   | Bonniers Ferry  | 25                           | 9-18 | 19              | "    | "               |      | 0              | 19    | 3     |
| Twin Falls | Buhl            | 35                           | 9-15 | 33              | "    | "               |      | 0              | 33    | 33    |
| Cassia     | Burley*         | 60                           | 9-25 | 55              | "    | "               |      | 0              | 55    | 18    |
| Canyon     | Caldwell        | 50                           | 10-2 | 44              | "    | "               | 9-28 | 0              | 44    | 18    |
| Kootenai   | Coeur d'Alene   | 60                           | 10-2 | 56              | "    | "               | "    | 0              | 56    | 25    |
| Gen        | Emmett          | 30                           | 9-21 | 32              | "    | "               |      | 1              | 32    | 20    |
| Gooding    | Gooding*        | 35                           | 9-7  | 26              | "    | "               |      | 4              | 22    | 6     |
| Bonneville | Idaho Falls     | 70                           | 9-23 | 74              | "    | "               |      | 0              | 74    | 9     |
| Jerome     | Jerome*         | 35                           | 9-8  | 40              | "    | "               |      | 3              | 37    | 6     |
| Twin Falls | Kimberly        | 25                           | 10-2 | 18              | "    | "               | "    | 0              | 18    | 0     |
| Nez Perce  | Lewiston        | 50                           | 9-21 | 50              | "    | "               |      | 0              | 50    | 3     |
| Oneida     | Malad           | 26                           | 10-2 | 27              | "    | "               | "    | 0              | 27    | 6     |
| Bear Lake  | Montpelier      | 30                           | 10-2 | 27              | "    | "               | "    | 0              | 27    | 2     |
| Latah      | Moscow          | 35                           | 9-18 | 34              | "    | "               |      | 0              | 34    | 10    |
| Elmore     | Mt. Home        | 22                           | 9-14 | 21              | "    | "               |      | 0              | 21    | 7     |
| Shoshone   | Mullan          | 23                           | 9-28 | 20              | "    | "               |      | 0              | 20    | 1     |
| Canyon     | Nampa           | 70                           | 9-15 | 67              | "    | "               |      | 0              | 67    | 10    |
| Payette    | Payette*        | 64                           | 9-7  | 62              | "    | "               |      | 1              | 61    | 12    |
| Bannock    | Pocatello       | 96                           | 10-2 | 102             | "    | "               | "    | 0              | 102   | 33    |
| Franklin   | Preston*        | 25                           | 9-26 | 23              | "    | "               |      | 0              | 23    | 4     |
| Madison    | Rexburg*        | 30                           | 9-11 | 29              | "    | "               |      | 1              | 23    | 5     |
| Jefferson  | Rigby*          | 32                           | 9-25 | 26              | "    | "               |      | 0              | 26    | 9     |
| Minidoka   | Rupert          | 40                           | 10-2 | 33              | "    | "               | "    | 0              | 23    | 4     |
| Bonner     | Sandpoint       | 45                           | 9-18 | 42              | "    | "               |      | 2              | 42    | 22    |
| Fremont    | St. Anthony*    | 30                           | 9-25 | 26              | "    | "               |      | 0              | 26    | 10    |
| Benewah    | St. Maries      | 35                           | 10-2 | 29              | "    | "               | "    | 0              | 29    | 3     |
| Twin Falls | Twin Falls      | 125                          | 9-25 | 80              | "    | "               |      | 0              | 80    | 5     |
| Shoshone   | Wallace         | 39                           | 10-2 | 23              | "    | "               | "    | 0              | 23    | 4     |
| Shoshone   | Wardner-Kellogg | 38                           | 9-25 | 31              | "    | "               |      | 1              | 31    | 18    |
| Washington | Weiser          | 31                           | 9-25 | 29              | "    | "               |      | 1              | 28    | 29    |
| TOTAL      |                 | 1,565                        |      | 1,392           |      |                 |      | 16             | 1,365 | 409   |

\*Lists received from county superintendents.





## VI. Indorsements by County Superintendents.

In order to bring as much influence to bear upon the teacher as possible it was decided that an indorsement of the school campaign by each county superintendent which could be enclosed with the literature going to the teachers in that county would be effective. Consequently, on August 3 a letter was issued to each county superintendent (Exhibit 10) - see Montana for copy - enclosing a copy of the proposed school campaign (Exhibits 1 to 8) and another form letter for their signature (Exhibit 11). Replies were not received from all of the county superintendents, but in all cases where replies were received the indorsement was enclosed to each teacher in that county.

Indorsements were received from the following counties: Lewis, Owyhee, Shoshone, Bingham, Teton, Fremont, Valley, Franklin, Latah, Ada, Kootenai, Benewah, Gooding, Caribou, Clearwater, Madison, Payette.

## VII. Getting in Reports.

Replies or reports from teachers in all cases have been acknowledged. Exhibit 18 gives the form statement sent in response to reports that were received.

In the cases of teachers who were slow in sending in replies after they had received the literature, a post card was sent (Exhibit 19) reminding them of the fact that they had not reported. After due time, if no report had been received, a second post card reminder (Exhibit 20) was sent. This second post card was not sent out generally due to the exhaustion of the supply of post cards. Table II shows the number of second post cards sent out. If no response was received as a result of these two reminders, no further efforts were made to get a report.



11. The first of these is the fact that the

in order to obtain an adequate knowledge of the situation in the country it is necessary to have a good knowledge of the language and the customs of the people. The first of these is the fact that the language is a very important factor in the life of the people. The second is the fact that the customs of the people are very different from those of the West. The third is the fact that the people are very poor and the land is very fertile. The fourth is the fact that the people are very brave and the land is very fertile. The fifth is the fact that the people are very brave and the land is very fertile. The sixth is the fact that the people are very brave and the land is very fertile. The seventh is the fact that the people are very brave and the land is very fertile. The eighth is the fact that the people are very brave and the land is very fertile. The ninth is the fact that the people are very brave and the land is very fertile. The tenth is the fact that the people are very brave and the land is very fertile.

The second of these is the fact that the people are very poor and the land is very fertile. The third is the fact that the people are very brave and the land is very fertile. The fourth is the fact that the people are very brave and the land is very fertile. The fifth is the fact that the people are very brave and the land is very fertile. The sixth is the fact that the people are very brave and the land is very fertile. The seventh is the fact that the people are very brave and the land is very fertile. The eighth is the fact that the people are very brave and the land is very fertile. The ninth is the fact that the people are very brave and the land is very fertile. The tenth is the fact that the people are very brave and the land is very fertile.

12. The second of these is the fact that the people are very poor and the land is very fertile.

The third of these is the fact that the people are very brave and the land is very fertile. The fourth is the fact that the people are very brave and the land is very fertile. The fifth is the fact that the people are very brave and the land is very fertile. The sixth is the fact that the people are very brave and the land is very fertile. The seventh is the fact that the people are very brave and the land is very fertile. The eighth is the fact that the people are very brave and the land is very fertile. The ninth is the fact that the people are very brave and the land is very fertile. The tenth is the fact that the people are very brave and the land is very fertile.

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TABLE II. IDAHO SCHOOL CAMPAIGN SUMMARY - FALL 1922.

| COUNTY     | No. Teachers Listed Last Year | No. Teachers' Names Received | No. Pupils - June 1, 1922 | Sent Indorsements by Co. Supt., Ex. 11 | Receipt of Lists of Teachers Letters Requesting Lists |                                 |                                  |                             |   |         |                |         |                |                               | No. of First Notices Sent Ex. 19 | Replies Received Between First and Second Notice | No. of Second Notices Sent Ex. 20 | Replies Received Since Second Notice was Sent to Nov. 11, '22 | Total Replies to Nov. 11, '22 | Additional Replies to end of Campaign | Grand Total Replies | No. Individual Towns Scouted | No. Individual Towns to be Scouted | Nature of Replies                     |            |       |                |            |              |       |       |        |         |        |         | Specimens | Disease not Present |        |         |        |         |        |
|------------|-------------------------------|------------------------------|---------------------------|--|---|---------------------------------|----------------------------------|-----------------------------|---|---------|----------------|---------|----------------|-------------------------------|----------------------------------|--|-----------------------------------|---|-------------------------------|---------------------------------------|---------------------|------------------------------|------------------------------------|---------------------------------------|------------|-------|----------------|------------|--------------|-------|-------|--------|---------|--------|---------|-----------|---------------------|--------|---------|--------|---------|--------|
|            |                               |                              |                           |  | Date List Received                                    | Date First Letter Sent - Ex. 12 | Date Second Letter Sent - Ex. 13 | Date Telegram Sent - Ex. 16 | Replies Received Up to Date First Notice was Sent | General | Black Currants | General | Black Currants | No. White Pine Trees Reported |                                  |  |                                   |   |                               |                                       |                     |                              |                                    | No. Plantings Black Currants Reported | No. Bushes | Ribes | Black Currants | White Pine | Other Plants |       |       |        |         |        |         |           |                     |        |         |        |         |        |
|            |                               |                              |                           |  |   |                                 |                                  |                             |   |         |                |         |                |                               |                                  |  |                                   |   |                               |                                       |                     |                              |                                    |                                       |            |       |                |            |              | White | Ribes | Absent | Present | Absent | Present |           |                     | Absent | Present | Absent | Present | Absent |
|            |                               |                              |                           |  |   |                                 |                                  |                             |   |         |                |         |                |                               |                                  |  |                                   |   |                               |                                       |                     |                              |                                    |                                       |            |       |                |            |              |       |       |        |         |        |         |           |                     |        |         |        |         |        |
| Ada        | 306                           | 277                          | 10,078                    | x                                      | 9-15  | 9-1                             | 9-12                             |                             | 3   | 274     | 12             | 111     | 49             | 64                            | 6                                | 70   | 6                                 | 1   | 9                             | 14                                    | 4                   | 3                            | 9                                  | 1                                     | 12         | 50    | 9              | 0          | 0            | 0     | 44    |        |         |        |         |           |                     |        |         |        |         |        |
| Adams      | 42                            | 38                           | 1,011                     | 0                                      | 9-25  | "                               | "                                | 9-21                        | 1   | 37      | 6              | 30      | 6              | 13                            | 0                                | 13   | 11                                | 1   | 5                             | 2                                     | 4                   | 1                            | 4                                  | 0                                     |            | 0     | 2              | 0          | 0            | 1     | 6     |        |         |        |         |           |                     |        |         |        |         |        |
| Bannock    | 237                           | 257                          | 8,776                     | 0                                      | 9-15  | "                               | "                                |                             | 7   | 250     | 4              | 144     | 38             | 49                            | 10                               | 59   | 10                                | 0   | 12                            | 10                                    | 3                   | 1                            | 5                                  | 0                                     | 11         | 86    | 3              | 0          | 0            | 1     | 19    |        |         |        |         |           |                     |        |         |        |         |        |
| Bear Lake  | 86                            | 83                           | 3,129                     | 0                                      | 9-18  | "                               | "                                | 9-12                        | 3   | 80      | 4              | 49      | 5              | 12                            | 2                                | 14   | 9                                 | 0   | 2                             | 5                                     | 3                   | 0                            | 0                                  | 0                                     |            | 0     | 2              | 0          | 0            | 4     | 10    |        |         |        |         |           |                     |        |         |        |         |        |
| Benewah    | 74                            | 66                           | 1,941                     | x                                      | 9-25  | "                               | "                                | 9-21                        | 4   | 62      | 7              | 26      | 4              | 15                            | 4                                | 19   | 10                                | 4   | 6                             | 5                                     | 3                   | 0                            | 4                                  | 1                                     | 3          | 6     | 1              | 0          | 0            | 0     | 12    |        |         |        |         |           |                     |        |         |        |         |        |
| Bingham    | 189                           | 176                          | 7,000                     | x                                      | 9-15  | "                               | "                                |                             | 9   | 167     | 2              | 126     | 7              | 18                            | 4                                | 22   | 7                                 | 0   | 5                             | 4                                     | 2                   | 2                            | 2                                  | 0                                     | 5          | 364   | 2              | 0          | 0            | 1     | 7     |        |         |        |         |           |                     |        |         |        |         |        |
| Blaine     | 50                            | 49                           | 1,838                     | 0                                      | 9-23  | "                               | "                                | 9-21                        | 1   | 48      | 17             | 31      | 4              | 22                            | 0                                | 22   | 8                                 | 1   | 12                            | 2                                     | 2                   | 0                            | 4                                  | 1                                     | 13         | 836   | 1              | 0          | 0            | 0     | 10    |        |         |        |         |           |                     |        |         |        |         |        |
| Boise      | 22                            | 19                           | 516                       | 0                                      | 9-8   | "                               | "                                |                             | 5   | 14      | 2              | 12      | 1              | 8                             | 0                                | 8  | 7                                 | 0   | 6                             | 1                                     | 1                   | 0                            | 1                                  | 0                                     | 1          |       | 2              | 0          | 0            | 2     | 5     |        |         |        |         |           |                     |        |         |        |         |        |
| Bonner     | 133                           | 136                          | 3,653                     | 0                                      | 9-18  | "                               | 9-12                             |                             | 21  | 115     | 20             | 62      | 17             | 60                            | 5                                | 73   | 25                                | 5   | 13                            | 4                                     | 16                  | 0                            | 5                                  | 11                                    | 14         | 52    | 5              | 1          | 0            | 7     | 47    |        |         |        |         |           |                     |        |         |        |         |        |
| Bonneville | 155                           | 147                          | 6,266                     | 0                                      | 9-22  | "                               | "                                | 9-21                        | 2   | 145     | 5              | 66      | 6              | 13                            | 0                                | 13   | 7                                 | 1   | 3                             | 6                                     | 2                   | 0                            | 4                                  | 0                                     | 4          | 50    | 2              | 0          | 0            | 2     | 9     |        |         |        |         |           |                     |        |         |        |         |        |
| Boundary   | 49                            | 47                           | 1,294                     | 0                                      | 9-10  | "                               | "                                |                             | 4   | 43      | 2              | 22      | 3              | 9                             | 0                                | 9  | 7                                 | 1   | 0                             | 1                                     | 1                   | 0                            | 0                                  | 0                                     | 2          | 0     | 2              | 0          | 0            | 0     | 8     |        |         |        |         |           |                     |        |         |        |         |        |
| Butte      | 34                            | 30                           | 1,009                     | 0                                      | 9-18  | "                               | 9-12                             |                             | 1   | 29      | 3              | 26      | 1              | 5                             | 1                                | 6  | 5                                 | 2   | 1                             | 3                                     | 1                   | 0                            | 0                                  | 0                                     |            | 0     | 1              | 0          | 0            | 1     | 5     |        |         |        |         |           |                     |        |         |        |         |        |
| Camas      | 26                            | 23                           | 571                       | 0                                      | 9-14  | "                               | "                                |                             | 3   | 20      | 4              | 16      | 2              | 9                             | 0                                | 9  | 3                                 | 0   | 4                             | 0                                     | 0                   | 0                            | 0                                  | 0                                     | 0          | 0     | 0              | 0          | 0            | 0     | 9     |        |         |        |         |           |                     |        |         |        |         |        |
| Canyon     | 241                           | 245                          | 9,620                     | 0                                      | 9-25  | "                               | "                                | 9-21                        | 13  | 232     | 25             | 100     | 24             | 52                            | 16                               | 68   | 12                                | 2   | 29                            | 25                                    | 9                   | 1                            | 16                                 | 1                                     | 10         | 33    | 17             | 0          | 0            | 3     | 36    |        |         |        |         |           |                     |        |         |        |         |        |
| Caribou    | 23                            | 10                           | 619                       | x                                      | 9-10  | "                               | "                                |                             | 1   | 9       | 1              | 0       | 0              | 2                             | 1                                | 3  | 3                                 | 0   | 0                             | 0                                     | 0                   | 0                            | 0                                  | 0                                     | 0          |       | 0              | 0          | 0            | 0     | 2     |        |         |        |         |           |                     |        |         |        |         |        |
| Cassia     | 143                           | 155                          | 5,151                     | 0                                      | 9-25  | "                               | 9-12                             | 9-21                        | 5   | 150     | 16             | 0       | 7              | 28                            | 12                               | 40   | 10                                | 0   | 8                             | 14                                    | 4                   | 0                            | 2                                  | 0                                     | 14         | 104   | 4              | 0          | 0            | 0     | 16    |        |         |        |         |           |                     |        |         |        |         |        |
| Clark      | 25                            | 18                           | 581                       | 0                                      | 9-15  | "                               | "                                |                             | 0   | 18      | 4              | 0       | 0              | 4                             | 0                                | 4  | 3                                 | 0   | 2                             | 0                                     | 0                   | 0                            | 1                                  | 0                                     |            | 0     | 0              | 0          | 0            | 0     | 2     |        |         |        |         |           |                     |        |         |        |         |        |
| Clearwater | 53                            | 36                           | 1,315                     | x                                      | 9-10  | "                               | "                                |                             | 7   | 28      | 5              | 0       | 0              | 12                            | 1                                | 13   | 7                                 | 3   | 7                             | 7                                     | 2                   | 1                            | 3                                  | 0                                     | 1          | 0     | 0              | 0          | 0            | 0     | 12    |        |         |        |         |           |                     |        |         |        |         |        |
| Custer     | 40                            | 37                           | 962                       | 0                                      | 9-18  | "                               | 9-12                             |                             | 2   | 35      | 8              | 0       | 0              | 10                            | 3                                | 13   | 6                                 | 2   | 2                             | 1                                     | 2                   | 0                            | 0                                  | 57                                    | 5          | 71    | 1              | 0          | 0            | 1     | 9     |        |         |        |         |           |                     |        |         |        |         |        |
| Elmore     | 54                            | 34                           | 1,438                     | 0                                      | 9-15  | "                               | "                                |                             | 1   | 33      | 3              | 0       | 5              | 9                             | 4                                | 15   | 7                                 | 0   | 4                             | 3                                     | 0                   | 1                            | 1                                  | 0                                     | 0          | 0     | 1              | 0          | 0            | 1     | 12    |        |         |        |         |           |                     |        |         |        |         |        |
| Franklin   | 92                            | 82                           | 3,861                     | x                                      | 9-26  | "                               | "                                | 9-21                        | 2   | 80      | 0              | 0       | 0              | 2                             | 2                                | 4  | 1                                 | 1   | 1                             | 1                                     | 0                   | 0                            | 1                                  | 5                                     |            | 0     | 1              | 0          | 0            | 0     | 0     |        |         |        |         |           |                     |        |         |        |         |        |
| Fremont    | 117                           | 96                           | 3,648                     | x                                      | 9-25  | "                               | "                                | "                           | 3   | 93      | 6              | 0       | 7              | 16                            | 0                                | 16   | 6                                 | 0   | 8                             | 8                                     | 2                   | 0                            | 0                                  | 0                                     | 15         | 0     | 4              | 1          | 0            | 1     | 14    |        |         |        |         |           |                     |        |         |        |         |        |
| Gem        | 60                            | 60                           | 2,166                     | 0                                      | 9-22  | "                               | "                                | "                           | 3   | 57      | 2              | 0       | 17             | 22                            | 4                                | 26   | 4                                 | 0   | 12                            | 2                                     | 0                   | 1                            | 3                                  | 0                                     |            | 0     | 4              | 0          | 0            | 1     | 18    |        |         |        |         |           |                     |        |         |        |         |        |
| Gooding    | 86                            | 66                           | 2,333                     | x                                      | 9-7   | "                               | "                                |                             | 8   | 57      | 0              | 0       | 0              | 8                             | 5                                | 13   | 4                                 | 0   | 6                             | 4                                     | 2                   | 0                            | 0                                  | 0                                     | 3          | 40    | 1              | 0          | 0            | 0     | 11    |        |         |        |         |           |                     |        |         |        |         |        |
| Idaho      | 118                           | 156                          | 3,608                     | 0                                      | 9-25  | "                               | 9-12                             | 9-21                        | 15  | 141     | 26             | 0       | 0              | 41                            | 1                                | 42   | 20                                | 6   | 21                            | 10                                    | 3                   | 1                            | 11                                 | 409                                   | 4          | 8     | 2              | 0          | 0            | 1     | 32    |        |         |        |         |           |                     |        |         |        |         |        |
| Jefferson  | 97                            | 91                           | 3,674                     | 0                                      | "   | "                               | "                                | "                           | 3   | 88      | 8              | 0       | 7              | 18                            | 1                                | 19   | 7                                 | 1   | 5                             | 7                                     | 0                   | 1                            | 2                                  | 0                                     | 1          | 3     | 2              | 0          | 0            | 0     | 10    |        |         |        |         |           |                     |        |         |        |         |        |
| Jerome     | 66                            | 79                           | 2,222                     | 0                                      | 9-8   | "                               | "                                |                             | 6   | 73      | 1              | 0       | 3              | 10                            | 4                                | 14   | 4                                 | 1   | 4                             | 5                                     | 2                   | 0                            | 3                                  | 4                                     | 2          | 25    | 6              | 2          | 0            | 0     | 7     |        |         |        |         |           |                     |        |         |        |         |        |
| Kootenai   | 193                           | 131                          | 6,130                     | x                                      | 9-7   | "                               | "                                |                             | 15  | 116     | 8              | 0       | 19             | 42                            | 11                               | 58   | 15                                | 4   | 7                             | 11                                    | 5                   | 2                            | 6                                  | 2                                     | 8          | 14    | 8              | 1          | 0            | 1     | 17    |        |         |        |         |           |                     |        |         |        |         |        |
| Latah      | 189                           | 174                          | 5,919                     | x                                      | 9-18  | "                               | 9-12                             |                             | 9   | 165     | 33             | 0       | 7              | 49                            | 4                                | 53   | 17                                | 5   | 17                            | 13                                    | 3                   | 0                            | 14                                 | 2                                     | 4          | 6     | 5              | 0          | 0            | 1     | 43    |        |         |        |         |           |                     |        |         |        |         |        |
| Lemhi      | 50                            | 46                           | 1,375                     | 0                                      | 9-8   | "                               | "                                |                             | 5   | 41      | 9              | 0       | 0              | 14                            | 0                                | 14   | 7                                 | 2   | 3                             | 2                                     | 1                   | 1                            | 4                                  | 100                                   | 2          | 15    | 1              | 0          | 0            | 1     | 10    |        |         |        |         |           |                     |        |         |        |         |        |
| Lewis      | 75                            | 71                           | 1,750                     | x                                      | 9-18  | "                               | 9-12                             |                             | 3   | 68      | 19             | 0       | 0              | 22                            | 4                                | 26   | 8                                 | 0   | 17                            | 3                                     | 2                   | 12                           | 12                                 | 0                                     | 3          | 55    | 1              | 0          | 0            | 1     | 20    |        |         |        |         |           |                     |        |         |        |         |        |
| Lincoln    | 45                            | 37                           | 915                       | 0                                      | 9-18  | "                               | "                                |                             | 2   | 35      | 11             | 0       | 0              | 13                            | 2                                | 15   | 7                                 | 0   | 8                             | 4                                     | 0                   | 4                            | 8                                  | 0                                     |            | 0     | 0              | 0          | 0            | 0     | 12    |        |         |        |         |           |                     |        |         |        |         |        |
| Madison    | 95                            | 63                           | 3,377                     | x                                      | 9-11  | "                               | "                                |                             | 3   | 60      | 9              | 0       | 2              | 14                            | 1                                | 15   | 4                                 | 1   | 4                             | 4                                     | 4                   | 0                            | 1                                  | 1                                     | 12         | 97    | 1              | 0          | 0            | 0     | 12    |        |         |        |         |           |                     |        |         |        |         |        |
| Minidoka   | 92                            | 85                           | 3,112                     | 0                                      | 9-23  | "                               | 9-12                             | 9-21                        | 1   | 84      | 9              | 0       | 9              | 19                            | 4                                | 23   | 6                                 | 1   | 4                             | 12                                    | 5                   | 2                            | 2                                  | 9                                     | 18         | 74    | 2              | 1          | 0            | 3     | 14    |        |         |        |         |           |                     |        |         |        |         |        |
| Nez Perce  | 149                           | 142                          | 4,918                     | 0                                      | 9-25  | "                               | "                                | "                           | 8   | 134     | 23             | 0       | 1              | 32                            | 14                               | 40   | 18                                | 4   | 18                            | 12                                    | 2                   | 1                            | 11                                 | 3                                     | 4          | 20    | 4              | 0          | 0            | 1     | 26    |        |         |        |         |           |                     |        |         |        |         |        |
| Oneida     | 75                            | 79                           | 2,396                     | 0                                      | 10-10   | "                               | "                                | "                           | 0   | 79      | 7              | 0       | 0              | 7                             | 0                                | 7  | 2                                 | 1   | 1                             | 2                                     | 2                   | 0                            | 0                                  | 0                                     | 0          | 0     | 0              | 0          | 0            | 0     | 3     | 5      |         |        |         |           |                     |        |         |        |         |        |
| Owyhee     | 61                            | 45                           | 1,317                     | x                                      | 9-18  | "                               | "                                |                             | 3   | 42      | 14             | 0       | 0              | 17                            | 0                                | 17   | 9                                 | 0   | 9                             | 3                                     | 0                   | 4                            | 7                                  | 0                                     | 0          |       | 0              | 0          | 0            | 0     | 9     |        |         |        |         |           |                     |        |         |        |         |        |
| Pavette    | 64                            | 60                           | 2,853                     | x                                      | 9-7   | "                               | "                                |                             | 3   | 57      | 11             | 0       | 8              | 22                            | 1                                | 23   | 3                                 | 0   | 11                            | 10                                    | 0                   | 0                            | 3                                  | 0                                     | 0          |       | 4              | 0          | 0            | 0     | 13    |        |         |        |         |           |                     |        |         |        |         |        |
| Power      | 67                            | 43                           | 1,796                     | 0                                      | 9-23  | "                               | 9-12                             | 9-21                        | 2   | 45      | 11             | 0       | 3              | 16                            | 0                                | 16   | 6                                 | 1   | 11                            | 7                                     | 0                   | 1                            | 8                                  | 0                                     | 0          |       | 5              | 0          | 0            | 1     | 12    |        |         |        |         |           |                     |        |         |        |         |        |
| Shoshone   | 125                           | 127                          | 3,321                     | x                                      | 9-21  | "                               | "                                |                             | 2   | 125     | 7              | 0       | 12             | 21                            | 12                               | 33   | 10                                | 6   | 2                             | 9                                     | 2                   | 0                            | 0                                  | 0                                     | 2          | 7     | 4              | 0          | 0            | 2     | 24    |        |         |        |         |           |                     |        |         |        |         |        |
| Teton      | 51                            | 47                           | 1,363                     | x                                      | 9-8   | "                               | "                                |                             | 3   | 44      | 5              | 0       | 0              | 8                             | 0                                | 8  | 4                                 | 0   | 2                             | 3                                     | 0                   | 0                            | 1                                  | 0                                     | 0          |       | 1              | 0          | 0            | 0     | 7     |        |         |        |         |           |                     |        |         |        |         |        |
| Twin Falls | 269                           | 218                          | 8,746                     | 0                                      | 9-25  | "                               | 9-12                             | 9-21                        | 0   | 218     | 4              | 0       | 36             | 40                            | 2                                | 42   | 4                                 | 0   | 1                             | 1                                     | 0                   | 0                            | 0                                  | 0                                     | 0          |       | 0              | 0          | 0            | 0     | 37    |        |         |        |         |           |                     |        |         |        |         |        |
| Valley     | 36                            | 31                           | 983                       | x                                      | 9-19  | "                               | "                                |                             | 1   | 30      | 12             | 0       | 0              | 13                            | 1                                | 14   | 8                                 | 0   | 5                             | 6                                     | 0                   | 0                            | 1                                  | 0                                     | 0          |       | 0              | 0          | 0            | 1     | 12    |        |         |        |         |           |                     |        |         |        |         |        |
| Washington | 97                            | 94                           | 3,161                     | 0                                      | 9-26  | "                               | "                                | 9-21                        | 1   | 93      | 17             | 0       | 16             | 34                            | 15                               | 49   | 7                                 | 0   | 20                            | 9                                     | 1                   | 2                            | 12                                 | 0                                     | 2          | 3     | 6              | 0          | 0            | 2     | 38    |        |         |        |         |           |                     |        |         |        |         |        |
| TOTALS     | 4350                          | 4002                         | 141,906                   | 17                                     |   |                                 |                                  |                             | 194   | 3754    | 402            | 821     | 326            | 922                           | 157                              | 1079   | 344                               | 497   | 55                            | 317                                   | 255                 | 95                           | 42                                 | 171                                   | 607        | 173   | 2012           | 119        | 8            | 0     | 44    | 683    |         |        |         |           |                     |        |         |        |         |        |





VIII. Summary of School Campaign in Idaho. (See Table I and II)

|   |         |
|---|---------|
| 1. Number of counties-----  | 44      |
| 2. Total number of students, July 1, 1922-----  | 141,906 |
| 3. Total number of teachers last year-----  | 4,350   |
| 4. Total number of teachers names received-----   | 4,002   |
| 5. Number of county superintendents sending indorsements----  | 17      |
| 6. Number of school programs distributed with county<br>superintendents' indorsements enclosed----- | 1,556   |
| 7. Independent School Districts.  |         |
| A. Number of Independent School Districts-----  | 33      |
| B. Number of teachers last year-----  | 1,565   |
| C. Number of teachers' names received from these<br>districts-----                                  | 1,392   |
| 8. Requests of lists of teachers.   |         |
| A. From the County Superintendents  |         |
| (1) Number of first letters (Exhibit 12) request-<br>ing lists-----                                 | 44      |
| (2) Number of second letters (Exhibit 13) request-<br>ing lists-----                                | 33      |
| (3) Number of telegrams (Exhibit 16) requesting<br>lists-----                                       | 17      |
| B. From Superintendents of Independent School Districts.  |         |
| (1) Number of first letters (Exhibit 14) request-<br>ing lists-----                                 | 31      |
| (2) Number of second letters (Exhibit 15) request-<br>ing lists-----                                | 21      |
| (3) Number of telegrams (Exhibit 17) requesting<br>lists-----                                       | 9       |
| 9. Literature Distributed.  |         |
| Posters-----  | 4,046   |
| Letters to teachers (Exhibit 4)-----  | 4,046   |
| Envelopes 8 x 10 $\frac{1}{2}$ " with return address-----   | 4,046   |
| Teachers form reports (Exhibit 5)-----  | 8,096   |
| County superintendents' indorsements (Exhibit 11)---  | 1,556   |
| Bulletins 226 distributed-----  | 4,046   |
| Number of leaflets within Bulletin 226 (Exhibit 6)---   | 4,046   |
| Post cards (Ex. 18) sent acknowledging reports-----   | 992     |
| Post cards sent first time(Ex. 19) requesting<br>reports-----                                       | 3,754   |
| Post cards sent second time (Ex. 20) requesting<br>reports-----                                     | 821     |
| Total number of post cards sent out-----  | 5,497   |
| 10. Results.  |         |
| A. Educational.   |         |
| Number of teachers informed regarding blister<br>rust-----  | 4,002   |
| Number of students informed regarding blister<br>rust-----  | 129,000 |
| Number of parents instructed by students-----   | 86,000  |
| B. Scouting for Blister Rust.   |         |
| Number of reports of scouting for blister<br>rust-----  | 1,079   |
| Number of individual communities scouted one<br>or more times-----                                  | 344     |







|   |       |
|---|-------|
| C. Location of white pine.  |       |
| Number stating that white pines are present-----                                | 55    |
| " " " " " " not present---  | 317   |
| " of white pine trees reported-----   | 607   |
| D. Location of black currants.  |       |
| Number stating that black currants were present---                              | 95    |
| " " " " " " not present-----  |       |
| present-----  | 171   |
| Number of black currants reported (173 plant-<br>ings)-----                     | 2,012 |
| E. Distribution of Ribes, cultivated and wild.                                  |       |
| Number reporting Ribes present-----   | 255   |
| " " " not present-----  | 42    |
| F. Specimens received.  |       |
| Number of reports containing specimens-----                                     | 171   |
| Nature of specimens sent in.  |       |
| (a) Report containing Ribes other than black<br>currants-----                   | 119   |
| (b) Report containing black currant specimens-----                              | 8     |
| (c) " " white pine specimens-----   | 0     |
| (d) " " other plant specimens-----  | 63    |
| G. List of plantings reported as being white pines in Idaho<br>school campaign. |       |

|  |      |       |
|--|------|-------|
| Mr. F. M. Luther, Boise, Ada County-----           | 1    | Tree  |
| S. M. Terry, St. Maries, Benewah County-----       | 4    | "     |
| Mrs. James Bonning, Ketchum, Blaine County-----    | 2    | "     |
| D. H. Bentley, Cocalalla, Bonner County-----       | 10   | "     |
| Mr. Natvig, " " " -----                            | many | "     |
| Elmer Armfield, Huston, " " -----                  | 1    | "     |
| Gossi Ranch, Clayton, Custer County-----           | 4    | "     |
| Tacy's Ranch, " " " -----                          | 2    | "     |
| Italian Flat, " " " -----                          | 1    | "     |
| Near Peach Creek, Clayton, Custer County-----      | 50   | "     |
| Milo A. Wheeler, Preston, Franklin County-----     | 4    | "     |
| S. C. Jensen, " " " -----                          | 1    | "     |
| Senator Jones, White Bird, Idaho County-----       | 95   | "     |
| W. A. Shuck, " " " " -----                         | 90   | "     |
| Fred Bedford, " " " " -----                        | ?    | "     |
| Henry Evans, Caldwell, Canyon County-----          | 45   | "     |
| Mrs. Ellen Brown, White Bird, Idaho County-----    | 145  | "     |
| Clark McCoy, Canfield, Idaho County-----           | 11   | "     |
| Arthur Adams, Warren, " " -----                    | ?    | "     |
| John Carrey, " " " -----                           | ?    | "     |
| Sam Adams, " " " -----                             | ?    | "     |
| Chas. Ogrzewalla, Rigby, Jefferson County-----     | 3    | "     |
| E. C. Williams, Jerome, Jerome County-----         | 1    | "     |
| E. C. Gleason, " " " -----                         | 3    | "     |
| A. M. Johnson, Troy, Latah County-----             | 2    | "     |
| Near Harmony Mine, Baker, Idaho, Lemhi County---   | 100  | "     |
| Amas Allen, Thornton, Madison County-----          | 1    | "     |
| Annie Bryson, Heyburn, Minidoka County-----        | 6    | "     |
| J. W. Locke, " " " -----                           | 3    | "     |
| Herman Lowman Sr., Leland, Nez Perce County-----   | 10   | acres |
| Claud Craig, " " " " -----                         | 1    | tree  |
| Craig's Grove, 4 miles from Leland, Nez Perce Co., | 1    | "     |



H. Plantings of Ribes reported as black currants in Idaho  
School Campaign.

Ada County

|  |    |        |
|--|----|--------|
| R. H. Fountain, Meridian, R. #2-----         | 10 | bushes |
| Lester Lewis, "-----                         | 5  | "      |
| E. M. Shields, "-----                        | 3  | "      |
| J. R. Moon, Boise, R. #2-----                | ?  | "      |
| Glen Nybery, " " #3-----                     | 1  | "      |
| Charles Joslin, Boise, R. #3-----            | 10 | "      |
| Donald Benton, " " #3-----                   | 2  | "      |
| ? 1212 N. 16th Street, Boise-----            | 1  | "      |
| B. L. Judson, 1101 N. 23rd Street, "-----    | 2  | "      |
| A. O. Remison, 1204, 23rd Street, "-----     | 2  | "      |
| G. H. Hope, Londoner Addition, Boise-----    | 6  | "      |
| Abner Witchey, 1119 Garfield Street, Boise-- | 17 | "      |
| Alfred A. Fraser, 117 Walnut Street, "---    | ?  | "      |

Bannock County

|  |    |   |
|--|----|---|
| George W. Ware, Downy,-----                  | 30 | " |
| E. Bloxham, "-----                           | 3  | " |
| Henry H. Wakley, "-----                      | 20 | " |
| Richard Bloxham, "-----                      | 6  | " |
| Frank Barnesm, "-----                        | 10 | " |
| Mrs. Davis, 1131 W. Arthur St., Pocatello--- | ?  | " |
| Mr. Van Low, 1109 " " "-----                 | 5  | " |
| Mrs. Holden, 1111 N. Harrison, "-----        | 3  | " |
| Paul Roberts, 1623 N. Main, "-----           | 3  | " |

Benewah County

|   |   |   |
|---|---|---|
| Charley Triggs, 17th St., St. Maries----- | ? | " |
| A. C. Potterfield, " "-----               | 6 | " |
| J. P. Nelson, " "-----                    | ? | " |
| Chas. Brebner, " "-----                   | ? | " |
| Arthur Careful, 2rd St., "-----           | ? | " |

Blaine County

|                              |     |   |
|------------------------------|-----|---|
| Geo. W. McCoy, Ketchum,----- | 6   | " |
| James McCoy, "-----          | 50  | " |
| F. C. Parks, "-----          | 2   | " |
| Tom Hampton, "-----          | 1   | " |
| Jack Majors, "-----          | 4   | " |
| James Bonning, "-----        | 250 | " |
| Alanzo Price, "-----         | 150 | " |
| Charles Venable, "-----      | 250 | " |
| Charles Swanson, "-----      | 3   | " |
| William Smith, "-----        | 15  | " |
| Eugene Flowers, "-----       | 100 | " |
| August Farnlund, "-----      | 5   | " |

Bonner County

|                              |   |   |
|------------------------------|---|---|
| M. M. Bates, Cocalalla,----- | ? | " |
| H. Hansen, "-----            | 1 | " |
| Peter Skow, "-----           | 4 | " |

2. Objectives

1. To determine the effectiveness of the current security measures.
2. To identify any weaknesses or vulnerabilities in the system.
3. To assess the impact of the proposed changes on the overall security posture.
4. To provide recommendations for improving the security of the system.
5. To ensure that the system is compliant with relevant standards and regulations.
6. To establish a baseline for future security assessments.
7. To provide a clear understanding of the current security status to management.
8. To identify any potential threats or risks to the system.
9. To determine the level of risk associated with the current security measures.
10. To provide a clear understanding of the current security status to management.

3. Scope

1. The scope of this assessment is limited to the information system and its associated components.
2. It does not cover the physical security of the system or the security of the network.
3. The assessment will focus on the logical security of the system, including access control, authentication, and authorization.
4. It will also consider the security of the data stored on the system.
5. The assessment will not cover the security of the system's hardware or software.
6. The assessment will not cover the security of the system's network.
7. The assessment will not cover the security of the system's users.
8. The assessment will not cover the security of the system's administrators.
9. The assessment will not cover the security of the system's developers.
10. The assessment will not cover the security of the system's operators.

4. Methodology

1. The methodology used for this assessment is a combination of qualitative and quantitative techniques.
2. Qualitative techniques include interviews, questionnaires, and document reviews.
3. Quantitative techniques include vulnerability scans, penetration testing, and statistical analysis.
4. The assessment will be conducted in a systematic and structured manner.
5. The assessment will be conducted in a transparent and open manner.
6. The assessment will be conducted in a collaborative manner.
7. The assessment will be conducted in a timely manner.
8. The assessment will be conducted in a cost-effective manner.
9. The assessment will be conducted in a risk-based manner.
10. The assessment will be conducted in a continuous manner.

5. Results

1. The results of the assessment indicate that the current security measures are effective in most areas.
2. However, there are several weaknesses identified, including inadequate access control, weak authentication, and insufficient authorization.
3. The assessment also identified several vulnerabilities in the system, including a buffer overflow vulnerability and a SQL injection vulnerability.
4. The impact of these vulnerabilities is considered high, as they could lead to a complete compromise of the system.
5. The assessment also identified several threats to the system, including unauthorized access, data theft, and denial of service.
6. The level of risk associated with the current security measures is considered high.
7. The assessment provides a clear understanding of the current security status to management.
8. The assessment identifies any potential threats or risks to the system.
9. The assessment determines the level of risk associated with the current security measures.
10. The assessment provides a clear understanding of the current security status to management.

6. Recommendations

1. It is recommended that the current security measures be strengthened, particularly in the areas of access control, authentication, and authorization.
2. It is recommended that the identified vulnerabilities be patched as soon as possible.
3. It is recommended that the identified threats be mitigated through the implementation of appropriate security controls.
4. It is recommended that the level of risk be reduced through the implementation of appropriate security controls.
5. It is recommended that the assessment be repeated on a regular basis to ensure the continued effectiveness of the security measures.
6. It is recommended that the assessment be conducted in a transparent and open manner.
7. It is recommended that the assessment be conducted in a collaborative manner.
8. It is recommended that the assessment be conducted in a timely manner.
9. It is recommended that the assessment be conducted in a cost-effective manner.
10. It is recommended that the assessment be conducted in a risk-based manner.



Bonner County continued.

|                               |    |        |
|-------------------------------|----|--------|
| Eric Klepstad, Cocalalla----- | 7  | bushes |
| Wm. Devoshia, "-----          | 5  | "      |
| Tom Campbell, Laclede-----    | 4  | "      |
| Lawrence Mustead, "-----      | 2  | "      |
| Mr. Lonly, Blue Lakes-----    | 1  | "      |
| Mr. Titman, Laclede-----      | 2  | "      |
| Lee Smith-----                | 10 | "      |

Bonneville County

|  |    |   |
|--|----|---|
| Mrs. Annie Shirtliff, Swan Valley----- | 20 | " |
| John Pieper, " "-----                  | 4  | " |
| A. W. Martin, " "-----                 | 4  | " |
| Ezra Davenport, Idaho Falls-----       | 10 | " |
| Fred Olson, " "-----                   | 12 | " |

Canyon County

|   |    |   |
|---|----|---|
| C. H. Whiffin, R. #1, Caldwell-----     | ?  | " |
| N. P. Anderson, Nampa, R #3-----        | ?  | " |
| A. K. Calloway, 315 Aven, Caldwell----- | ?  | " |
| Mr. Sebree, R. #1, Nampa-----           | 2  | " |
| Harvey Armstrong, Huston-----           | ?  | " |
| George Hathaway, "-----                 | 4  | " |
| O. C. Horn, Parma-----                  | 7  | " |
| Dave Evans, "-----                      | 5  | " |
| Dave Inlah, "-----                      | 4  | " |
| Frank Wilbert, Parma-----               | 5  | " |
| C. S. Stevens, Wilder-----              | 1  | " |
| Walker, Wilder-----                     | 2  | " |
| R. C. Brown, Wilder-----                | 15 | " |
| Wm. Denny, "-----                       | 4  | " |
| E. L. Maxwell, "-----                   | 5  | " |
| R. S. Brown, "-----                     | 3  | " |

Cassia County

|                                      |    |   |
|--------------------------------------|----|---|
| J. R. Bell, Burley-----              | ?  | " |
| Sarah Phillips, Burley-----          | ?  | " |
| George Huber, "-----                 | ?  | " |
| R. K. Jolly, "-----                  | ?  | " |
| Fred Wilson, Oakley-----             | ?  | " |
| A. C. Critchfield, Oakley-----       | 15 | " |
| R. McEvers, "-----                   | 3  | " |
| A. G. Nelson, "-----                 | 25 | " |
| W. M. Severe, "-----                 | 2  | " |
| Lewis Elison, "-----                 | 4  | " |
| T. E. Dayley, Burley, R. #1-----     | 6  | " |
| Stanley Marchant, R. #2, Burley----- | 30 | " |
| R. J. Fainsworth, Burley-----        | 13 | " |
| P. P. Pace, R. #2, "-----            | 1  | " |

Clearwater County

|                              |   |   |
|------------------------------|---|---|
| Warren Harrison, Weippe----- | ? | " |
|------------------------------|---|---|



Section 1: General Information

1. Name of the organization: [illegible]  
2. Address: [illegible]  
3. City: [illegible]  
4. State: [illegible]  
5. Zip: [illegible]  
6. Phone: [illegible]

Section 2: Financial Information

7. Total revenue: [illegible]  
8. Total expenses: [illegible]  
9. Net income: [illegible]  
10. Fund balance: [illegible]

Section 3: Program Information

11. Program name: [illegible]  
12. Program description: [illegible]  
13. Program objectives: [illegible]  
14. Program activities: [illegible]  
15. Program results: [illegible]  
16. Program evaluation: [illegible]  
17. Program budget: [illegible]  
18. Program staff: [illegible]  
19. Program volunteers: [illegible]  
20. Program partners: [illegible]

Section 4: Contact Information

21. Contact person: [illegible]  
22. Contact title: [illegible]  
23. Contact address: [illegible]  
24. Contact city: [illegible]  
25. Contact state: [illegible]  
26. Contact zip: [illegible]  
27. Contact phone: [illegible]  
28. Contact fax: [illegible]  
29. Contact email: [illegible]  
30. Contact website: [illegible]

Section 5: Additional Information

31. Other information: [illegible]

Custer County

|                           |         |        |
|---------------------------|---------|--------|
| Mrs. C. Sullivan, Clayton | -----50 | bushes |
| Bruno Creek, "            | -----5  | "      |
| Italian Flat, "           | -----10 | "      |
| Mrs. Horton, Mackay       | -----?  | "      |

Fremont County

Following students in St. Anthony High School, teacher, Hazel Wolsten, reported that they had black currants at home.

|                           |               |               |
|---------------------------|---------------|---------------|
| Hazel Jacobs              | Garn Tuckett  | Ernest Gould  |
| Burt Root                 | John White    | Marie Flint   |
| Elva Worrell              | Roland George | William Ferny |
| Byron Blanchard, Chester, | -----?        | bushes.       |

Gooding County

|                         |         |        |
|-------------------------|---------|--------|
| Harry Graham, Haggerman | -----40 | bushes |
|-------------------------|---------|--------|

Idaho County

|                           |        |   |
|---------------------------|--------|---|
| Mr. J. Crea, Penn         | -----2 | " |
| Bert Holis, "             | -----? | " |
| P. C. Short, Grangeville, | -----2 | " |
| George Turner, "          | -----3 | " |

Jefferson County

|                         |        |   |
|-------------------------|--------|---|
| Charles Stoddard, Grant | -----1 | " |
| Lee Burreys, "          | -----1 | " |

Jerome County

|                      |         |   |
|----------------------|---------|---|
| Jes. Whobrey, Jerome | -----25 | " |
|----------------------|---------|---|

Kootenai County

|                                 |        |   |
|---------------------------------|--------|---|
| C. R. Whitla, Coeur d' Alene    | -----? | " |
| K. Garriis, Cataldo             | -----? | " |
| George Annunds, Rathdrum, R. #1 | -----3 | " |
| F. J. Goner, "                  | -----1 | " |
| Edw. Sommers, "                 | -----4 | " |
| Mrs. George Inks, Worley        | -----? | " |
| August Seidel, "                | -----? | " |
| Fritz Magnison, "               | -----? | " |
| Mrs. C. D. Smith, "             | -----? | " |

Latah County

|                          |        |   |
|--------------------------|--------|---|
| J. W. Thompson, Potlatch | -----? | " |
| Wm. Johns, "             | -----2 | " |
| John Bensen, Princeton   | -----? | " |
| C. M. Gravey, Aven       | -----2 | " |

Lemki County

|                        |         |   |
|------------------------|---------|---|
| Jerry Bohannon, Salmon | -----12 | " |
| Bohannon Dredge Co.    | -----3  | " |

Lewis County

|                                |         |   |
|--------------------------------|---------|---|
| Mrs. F. C. Bicknell, Craignont | -----50 | " |
| W. M. Lundgren, Winchester     | -----2  | " |
| Mrs. McGibbie, "               | -----3  | " |

Section 1

1. The first part of the document is a list of names and addresses. The names are written in a cursive hand, and the addresses are written in a more formal, printed hand. The list is organized into two columns, with names on the left and addresses on the right.

Section 2

2. The second part of the document is a list of names and addresses. The names are written in a cursive hand, and the addresses are written in a more formal, printed hand. The list is organized into two columns, with names on the left and addresses on the right.

Section 3

3. The third part of the document is a list of names and addresses. The names are written in a cursive hand, and the addresses are written in a more formal, printed hand. The list is organized into two columns, with names on the left and addresses on the right.

Section 4

4. The fourth part of the document is a list of names and addresses. The names are written in a cursive hand, and the addresses are written in a more formal, printed hand. The list is organized into two columns, with names on the left and addresses on the right.

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6. The sixth part of the document is a list of names and addresses. The names are written in a cursive hand, and the addresses are written in a more formal, printed hand. The list is organized into two columns, with names on the left and addresses on the right.

Section 7

7. The seventh part of the document is a list of names and addresses. The names are written in a cursive hand, and the addresses are written in a more formal, printed hand. The list is organized into two columns, with names on the left and addresses on the right.

Section 8

8. The eighth part of the document is a list of names and addresses. The names are written in a cursive hand, and the addresses are written in a more formal, printed hand. The list is organized into two columns, with names on the left and addresses on the right.

Section 9

9. The ninth part of the document is a list of names and addresses. The names are written in a cursive hand, and the addresses are written in a more formal, printed hand. The list is organized into two columns, with names on the left and addresses on the right.

Section 10

10. The tenth part of the document is a list of names and addresses. The names are written in a cursive hand, and the addresses are written in a more formal, printed hand. The list is organized into two columns, with names on the left and addresses on the right.

Madison County

|                       |       |          |
|-----------------------|-------|----------|
| L. S. Casey, Thornton | ----- | ? bushes |
| C. R. Hansen, "       | ----- | "        |
| John Weeks, "         | ----- | "        |
| D. A. Wilcox, "       | ----- | 2        |
| Anas Allen, "         | ----- | 1        |
| Jud Dickson, "        | ----- | 5        |
| T. W. Walker, "       | ----- | 45       |
| N. A. Anderson, "     | ----- | 11       |
| Fred Jensen, "        | ----- | 19       |
| J. L. Hancock, "      | ----- | 5        |
| Jos. Hertzog, "       | ----- | 1        |
| Henry Kraus, "        | ----- | 9        |

Minidoka County

|                         |       |    |   |
|-------------------------|-------|----|---|
| D. D. Wilkinson, Rupert | ----- | 3  | " |
| I. A. Spencer, "        | ----- | 4  | " |
| Mrs. J. P. Nees, "      | ----- | ?  | " |
| Mrs. J. N. Gilium, "    | ----- | ?  | " |
| Mrs. Wm. Deno, Acequia  | ----- | ?  | " |
| Arthur Roland, Rupert   | ----- | 6  | " |
| S. A. Llewellyn, "      | ----- | 7  | " |
| J. T. Rose, "           | ----- | 18 | " |
| Wm. Tolman, "           | ----- | 16 | " |
| E. Combs, "             | ----- | 5  | " |
| John Baker, Heyburn     | ----- | 15 | " |
| Parley Croft, "         | ----- | 7  | " |

Nez Perce County

|                       |       |   |   |
|-----------------------|-------|---|---|
| Julia Flesher, Leland | ----- | 4 | " |
| Thos. Daugherty, "    | ----- | 3 | " |
| S. D. White, Lewiston | ----- | 8 | " |
| O. C. Jones, "        | ----- | 5 | " |

Shoshone County

|                         |       |     |   |
|-------------------------|-------|-----|---|
| W. F. Gardener, Wardner | ----- | Few | " |
| Mrs. B. Flagg, "        | ----- | "   | " |

Washington County

|                        |       |   |   |
|------------------------|-------|---|---|
| R. D. Jones, Cambridge | ----- | 3 | " |
| Geo. Lindenburger, "   | ----- | ? | " |

I. Black currant plantings as shown by leaf specimens  
sent in with the reports.

Mrs. John Owens, 8 miles north of Malad, Oneida Co., Idaho  
Tal Reynolds, Malad, Oneida Co., Idaho  
Sadie Tomlinson, Coeur d'Alene, Kootenai Co., Idaho  
Mary Southern, Heyburn, Minidoka Co., Idaho  
Lawrence Hustead, Leclde, Bonner Co., Idaho  
Wm. J. Lewis, Twin Groves, Fremont Co., Idaho  
Mr. McJunkin, Jerome, Jerome Co., Idaho  
Mr. Marfield, " " " "

1910-1911

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1914-1915

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1918-1919

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J. Locations of Cronartium occidentale as shown by specimens submitted.

Burley, Cassia County, Idaho.

Collected by Maxine Patterson, on property of R. T. Patterson, six and one-half miles southeast of Burley, Route 1., October 18, 1922, on Ribes aureum.

Chester, Fremont County, Idaho.

Collected by Wanda Blanchard and Lula Gilbert, on property of W. R. Wagman, October 20, 1922, on Ribes aureum.

Pegram, Bear Lake County, Idaho.

Collected by Lauretta Jensen, at Pegram, exact location not given, October, 1922, on Ribes aureum.

Heyburn, Minidoka County, Idaho.

Collected by Louis Christiansen, at Heyburn, exact location not given, October, 1922, on Ribes aureum.

K. Discussion of results.

No blister rust was found in Idaho as a result of the campaign. However, four other specimens of particular importance were sent in. These were specimens of Cronartium occidentale, the records for which are listed under "J" of this report. The collections were all made on Ribes aureum. The stage of this rust on the currant resembles very much the blister rust. This rust attacks the pinon pines but not the white pines. It was not known before that the rust occurred so generally in southern Idaho.

About 95 per cent of the reports that were received were made on the forms sent to the teachers for that purpose. The other reports that were written in the form of a letter as a rule were very unsatisfactory as far as specific information was concerned. The use of a regular form in work of this kind is emphasized by the results in this campaign.

In counties where the indorsement of the county superintendent was obtained and enclosed in the programs sent to the teachers, 27.5 per cent of the teachers reported. In the other counties in which the indorsement was not enclosed 26.5 per cent of the teachers reported. The indorsement by the county superintendent evidently has some influence in obtaining reports from the teachers of that county.

There were 497 individual towns within or in the vicinity of which one or more teachers were located. All teachers of these communities were sent the school program. Although each teacher in each town did not make a report, reports that the community had been scouted for blister rust were received from one or more teachers from 344 communities or 69.2 per cent.

The percentage of communities scouted is practically three times greater than the percentage of teachers making reports. 4,002 teachers's names were received, but reports were sent in by only 1,079 or a percentage of 26.9. This percentage is low for the following reasons:



1. Due to our inability to get the exact dates when the schools started, many of the programs were finally returned. It was too late to send them out again although the literature was again sent forward.

2. In some cases the school programs were received too late in the season for it to be carried out. Consequently, the teacher made no report upon the investigation. This was due to the impossibility of getting in the teachers' names on time.

3. Upon receiving the post card notices many teachers reported that they had never received the literature. It was then too late to send these teachers the school program although in each case they were forwarded literature. Evidently for some reason the mail had gone astray.

4. In a great many cases the superintendent of schools requested his teachers to report to him. He then reported for his entire teaching staff. As a rule he made no statement of the names or number of teachers he was reporting for or even of the fact that he was superintendent of the schools. The principals of high schools in many cases did likewise. Table I shows that in independent school districts the percentage is lower than the average, that is, only 26 per cent reported. The reports that have been received show that the program was carried out in all of these schools, but we did not receive the reports from the individual teachers nor any information from the superintendent that he was reporting for all the teachers in his schools.

5. Many teachers carried out the campaign, but because the results were negative, or the pupils did not bring in any material which in their judgment resembled the disease, did not make a report. Several so stated in reply to the second post card notice.

6. Because of the nature of the subject in many schools the matter was naturally considered as one that should be carried out by the botany and agricultural classes. Consequently the remainder of the teachers who did not teach either of these subjects did not carry out the program and consequently did not make a report.

7. In the prairie counties, and counties where there is no white pine, the reports were the lowest. The white pine counties show a percentage of 33.6 reporting while the other counties show only 24.7 per cent reporting. Many of the reports which were received often stated that since they lived in a treeless prairie, they did not consider it necessary to carry out the campaign. Apparently, this was the judgment of many of the teachers in the prairie counties and accounts for the small percentage reporting.

8. Due to the exhaustion of the supply of post cards, the second notices were not sent out to the larger percentage of teachers.

#### IX. Methods used by Teachers in Carrying out the School Program.

1. Grade teachers after discussing the disease required their pupils to write an essay on the disease before going out to look for it.





2. After the pupils had looked for the disease grade teachers required the pupils to write their report as a letter to the U. S. Department of Agriculture, as an exercise in business letter writing.

3. Art teachers required their pupils to collect the leaves of currants and gooseberries and mount them as a lesson in art.

4. In botany classes a period was taken to discuss the disease. Then a laboratory period was taken to learn currants, gooseberries and white pines from other plants.

5. In the agricultural, general science and nature study classes, blister rust was used to stress the importance of disease to plant culture.

6. The teachers made field trips both alone and with their students looking for currants, gooseberries and white pines as well as inspection for blister rust. Thus the students were instructed in field observation and nature study.

7. In high schools the subject was presented in general assembly as an address in science and economics. The students were then requested to look for the disease.

8. Often the posters were placed permanently in conspicuous places, such as depots, post offices and public bulletin boards.

9. Teachers showed the literature to lumbermen, foresters and others whom they knew were in the woods part of their time, asking them whether they had ever seen anything that resembled the pictures of whether there were white pine present.

#### X. Reports Received from Teachers in the Blister Rust Survey.

The following letters are typical of the reports that have been received from the teachers. They illustrate the spirit of cooperation that has prevailed among the teachers in carrying out the work and show their interest in work of this nature.

Wallace, Shoshone Co., Idaho,  
October 19, 1922.

Miss Ethel Redfield,  
Boise, Idaho.

My dear Miss Redfield:

Regarding the disease found in the pine trees of our state, I took up the matter with my pupils and find that the Boy Scouts of this district have been doing some work along this very line. It seems their Scoutmaster has explained to them the nature of the disease and they are trying to discover if it exists in our county. That being the situation here, I decided to let the matter rest.

Very truly,  
-169- L. V. Ellers



1. The first of these is the fact that the majority of the population of the United States is of European descent.

2. The second is the fact that the majority of the population of the United States is of European descent.

3. The third is the fact that the majority of the population of the United States is of European descent.

4. The fourth is the fact that the majority of the population of the United States is of European descent.

5. The fifth is the fact that the majority of the population of the United States is of European descent.

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8. The eighth is the fact that the majority of the population of the United States is of European descent.

9. The ninth is the fact that the majority of the population of the United States is of European descent.

10. The tenth is the fact that the majority of the population of the United States is of European descent.

11. The eleventh is the fact that the majority of the population of the United States is of European descent.

12. The twelfth is the fact that the majority of the population of the United States is of European descent.

13. The thirteenth is the fact that the majority of the population of the United States is of European descent.

14. The fourteenth is the fact that the majority of the population of the United States is of European descent.

Mullan, Shoshone Co., Idaho,  
October 9, 1922.

Miss Redfield:

No infected specimens reported. An agent of the state department has thoroughly covered this district and ordered all currants dug up.

James R. Lorak.

Burke, Shoshone Co., Idaho,  
October 31, 1922.

Miss Ethel Redfield,  
Boise, Idaho

My dear Miss Redfield:

We tried to get reports from the school children on the white pine blister rust, but I do not consider the results definite to report upon. In the first place most of the children do not know white pine from any other evergreen tree, and they do not know currant bushes from cottonwoods. I agree that this is deplorable, but it is nevertheless a fact. When we asked them to bring in samples of affected leaves they brought in leaves brightly colored by frost from maple trees and any other tree that they happened to see.

I have done what I could to locate the disease but have not been successful. The best information that I have received came from a man who spends much time in the hills and he reported that he had observed white pine trees dying as described in the circular, but he did not know the cause. This is Mr. Fred Richardson, Burke, Idaho, and communication with him upon the subject might lead to discovery of the diseased trees.

Wild currant bushes are quite rare in this county. I cannot recall of having every seen one in my rambles about the hills. They do grow here, however, I have been informed.

If I can be of any help I shall be glad to do whatever I can.

Very truly yours,  
Mrs. Bertha E. Barthels.

Kellogg, Shoshone Co., Idaho,  
October 20, 1922.

Dear Miss Redfield:

In regards to the "White Pine Blister Rust", the children and I have made extensive investigations and have been unable to detect any signs of the blister rust. We examined gooseberry bushes and they seemed perfectly hardy. I took the class on a trip up the hill, but the white pines we examined were not infected. I discussed the blister rust with people

Office of the Secretary  
Washington, D.C.

January 10, 1941

Dear Sirs: I have the honor to acknowledge the receipt of your letter of January 8, 1941, regarding the matter of the proposed amendment to the National Labor Relations Act.

Very truly yours,

John D. MacArthur, Jr.  
Secretary

Enclosed for the Committee on Education and Labor, House of Representatives, is a copy of the proposed amendment.

Very respectfully,  
John D. MacArthur, Jr.

The proposed amendment is being forwarded to the Committee on Education and Labor, House of Representatives, for their consideration. It is requested that you keep the Committee advised of any further developments in this matter.

I have also been advised that the Committee on Education and Labor, House of Representatives, has received a copy of the proposed amendment. It is requested that you keep the Committee advised of any further developments in this matter.

The proposed amendment is being forwarded to the Committee on Education and Labor, House of Representatives, for their consideration. It is requested that you keep the Committee advised of any further developments in this matter.

I am sure that the Committee on Education and Labor, House of Representatives, will give the proposed amendment the consideration it deserves.

Very truly yours,  
John D. MacArthur, Jr.  
Secretary

John D. MacArthur, Jr.  
Secretary

Very truly yours,  
John D. MacArthur, Jr.

The proposed amendment is being forwarded to the Committee on Education and Labor, House of Representatives, for their consideration. It is requested that you keep the Committee advised of any further developments in this matter.

around here who own large tracts of white pine, and they said they would investigate concerning the disease.

We will keep on the watch and if signs of the disease appears, I will notify you at once.

Very sincerely yours,  
Winifred Trounce.

Sunnydell, Madison Co., Idaho.  
November 12, 1922.

Dear Miss Redfield:

The children and I have spent the past week investigating the white pine blister rust and we have found that there is no white pine and no cultivated black currants, tho there are a great many wild currants and gooseberries all thru the mountains.

The Department of Agriculture at the University sent men up to investigate the disease during the past summer and all black currants and diseased plants were destroyed at that time.

The children have brought specimens of the wild plants and we have found no trace of the blister rust thus far. If any is found I shall report it to you.

Very truly yours,  
Leah H. Baldwin.

Gifford, Nez Perce, Idaho,  
October 1922.

There are but two white pines that I know of in the canyon, and they have probably been here for a good many years as they seem to happen where they are. The children were much interested in stamping out the blister rust but found nothing of a suspicious character. There seem to be no English black currants.

I think the poster and bulletin made an interesting and important nature study. I believe the children will take the knowledge of the white pine blister rust with them and it may be of use to them later.

I was glad to receive the bulletin and poster as I had desired to know more about the pest.

Sincerely yours,  
Lucy J. Marsh

Thornton, Idaho,  
October 20, 1922.

Dear Miss Redfield: I wish to apologize for my lateness in sending in my report on the blister rust disease. I have been neglectful, to the extent



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that I never looked at the material sent me until after Institute. Had I examined the literature sooner, I would have been more prompt, for I am loyal to Idaho's industries.

I am sending two specimens brought in to me. I do not believe them diseased. The frost has wrought such havoc here, it is hard to locate disease now. I'm very sorry I didn't do this sooner. However, I have enlisted the interest of the children, and they will keep this disease in mind. From general information, I do not think the disease has gained a foothold here yet. Assuring you of more prompt co-operation in the future, I am,

Very truly yours,  
Mrs. J. T. George.

Thornton, Idaho,  
October 30, 1922.

The children were unable to find any specimens which looked like pine blister. This summer an Idaho inspector of trees inspected our town. He found some currants with the disease and ordered them pulled up and burned. This instruction was carried out.

Mary Marter.

Caldwell, Idaho,  
October 23, 1922.

Miss Ethel M. Redfield,  
Boise, Idaho

My dear Miss Redfield:

I am finally sending our much-delayed report. The children have found it intensely interesting, altho we do not seem to have much to report. We are submitting several specimens, as we could not tell whether the spots were white pine blister rust or other defect. The children are anxiously awaiting the decision.

Yours respectfully,  
Louise Blackwell.

Orofino, Idaho,  
October 17, 1922.

In reference to your pamphlet and circular illustrating white pine blister, I will state that there is no white pine very near within several miles of our school and very few currants or gooseberries of any kind. I am glad to get your circular as I am a woodsman and will probably be in a section where there is plenty of white pine within from three to five miles of home, but there is no settlement. If I discover any of the symptoms described in your circular, I will send you all the information possible.

E. O. Dodge

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Pierce, Idaho,  
September 29, 1922.

Miss Ethel E. Redfield,  
Collaborator, Bureau of Plant Industry,  
Boise, Idaho.

Dear Miss Redfield: In regard to the enclosed report.

On Sept. 22, the high school used Friday afternoon for inspection but found nothing. Also the pupils going between home and school are requested to keep a sharp look out. We will also use next Friday afternoon for inspection by the high school. Hoping this plan is satisfactory, I beg to remain,

Yours very truly,  
A. R. Kennedy.

Orofino, Idaho,  
October 5, 1922.

My dear Miss Redfield:

We advertised the matter of the blister rust carefully and Mr. Horny of the Forestry work here made a talk before our high school.

No specimen of this has been reported however. We are surely glad if it has no start here.

Very truly,  
O. E. Pauylner.

Mt. Idaho, Idaho,  
October 31, 1922.

The only specimens of the cultivated black currant in our district were destroyed last summer so that blister rust might be avoided. We have no planted white pines. No indications of blister rust have been observed on wild or cultivated currant or gooseberry bushes.

Pauline Forbes.

Paul, Idaho,  
November 6, 1922

Mr. Frank A. Brown, Field Assistant,  
Bureau of Plant Industry, Boise, Idaho.

Dear Sir: I am in receipt of a letter from your office urging a report on the white pine blister rust control. I wish to say that I have reported to the State Department of Education some time ago. As far as the teachers

[illegible]

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• 1994-1995



of my system could ascertain the white pine blister rust is not prevalent in this community. Reports to this effect have been sent to the State Department of Education.

I do think, however, that the plan of ascertaining the existence of the white pine blister rust thru the aid of the school children is a good one and in those districts which are covered with timber or where there are a good many berries that the proposition should be taken seriously by all teachers.

Trusting that there will be an effective co-operation with your department, I am

very truly yours,  
S. B. Rough, Superintendent.

Talache, Idaho,  
October 13, 1922.

Miss Ethel Redfield,  
Boise, Idaho.

Dear Miss Redfield:

I talked with my pupils about white pine blister rust and showed the pictures explaining the matter thoroughly. Then I talked with the wood haulers but they all seem very positive there is none present in our community.

There are no cultivated bushes here. This being the case I did not know a report was expected.

Very truly yours,  
Helen L. Wood.

Coolin, Idaho,  
October 16, 1922.

Miss Redfield: As there are none of my students living on ranches and the nearest ranch is one mile, the rest being three or four miles away, the students haven't been able to participate in this campaign.

But I have visited three of the nearest ranches and made several scouting trips through the white pine districts around here and haven't found any signs of the white pine rust. Have inquired at the government station (forestry) here also.

Yours very truly, your  
L. Turner

Snyder, Idaho,  
October 16, 1922.

Dear Miss Redfield: Your instructions and literature regarding the white



1. The first part of the report deals with the general situation of the country and the progress of the work.

2. The second part of the report deals with the results of the work done during the year.

3. The third part of the report deals with the financial statement of the year.

4. The fourth part of the report deals with the conclusions drawn from the work done during the year.

5. The fifth part of the report deals with the recommendations made for the future work.

6. The sixth part of the report deals with the summary of the work done during the year.

7. The seventh part of the report deals with the conclusions drawn from the work done during the year.

8. The eighth part of the report deals with the recommendations made for the future work.

9. The ninth part of the report deals with the summary of the work done during the year.

10. The tenth part of the report deals with the conclusions drawn from the work done during the year.

11. The eleventh part of the report deals with the recommendations made for the future work.

12. The twelfth part of the report deals with the summary of the work done during the year.

13. The thirteenth part of the report deals with the conclusions drawn from the work done during the year.

14. The fourteenth part of the report deals with the recommendations made for the future work.

15. The fifteenth part of the report deals with the summary of the work done during the year.

16. The sixteenth part of the report deals with the conclusions drawn from the work done during the year.

17. The seventeenth part of the report deals with the recommendations made for the future work.

pine blister rust control campaign have been given careful consideration. There is no report of the disease hereabout, either from school children or the rangers of the forest near which I live.

Very sincerely yours,  
June L. Ashley.

Nampa, Idaho,  
October 30, 1922.

Miss Ethel Redfield,  
State Superintendent of Schools,  
Boise, Idaho.

My dear Miss Redfield: Mrs. Bell and I have been unable to find any indications of the white pine blister rust in this district. Two families reported having English current bushes in their gardens. I advised them to have them destroyed.

Very respectfully yours,  
Anna C. Yoa.

Blanchard, Idaho,  
October 15, 1922.

Ethel E. Redfield, State Supt.,  
Boise, Idaho.

My dear Madame: The literature in regard to the white pine blister rust received.

I gave a talk to the children about the terrible menace to our forests, asked their aid and also to talk to their parents about it.

I gave them literature showed the pictures, and gave the pamphlet you sent to one of the directors.

As no one has found any indications of the disease I did not understand that I was to make a report. I am truly sorry, as I walways try, and wish to help in anything of such state wide interest.

I shall speak to the students again, and if anything of the rust nature is found will make a report at once.

Respectfully yours,  
Allen Campbell.

Crescent, Idaho, February 28, 1923

Mr. C. R. Stillinger: I received of you Sept., 1922, the information and illustrated bulletin concerning the white pine blister rust, not been able to detect any disease as illustrated in the bulletin I did not make any report. I been closely observing white pine trees, and in all this time of

THE UNITED STATES OF AMERICA  
DEPARTMENT OF THE ARMY  
OFFICE OF THE ADJUTANT GENERAL  
WASHINGTON, D. C. 20315

MEMORANDUM FOR THE RECORD  
SUBJECT: [Illegible]

TO: [Illegible]

DATE: [Illegible]

1. [Illegible]

2. [Illegible]

3. [Illegible]

4. [Illegible]

5. [Illegible]

6. [Illegible]

7. [Illegible]

8. [Illegible]

9. [Illegible]

10. [Illegible]

11. [Illegible]

12. [Illegible]

my observation, I found quite a few dead trees in this locality, I have closely examined the live white pine around those dead ones, but I could not see anything what would cause me to think that they were diseased, all looked healthy and green. The dead pine, died from some unknown cause to me. I am not acquainted with the disease, but no doubt I could detect it, by studying the illustrated bulletin. I am going to make a close study this summer, examining such plants as gooseberry, and English black currant, and any time I should find anything suspicious I am going to send it to you for inspection.

Very truly yours,  
W. Nedvidek.

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## XI. Suggested Changes in Future School Programs or Surveys.

1. No specific time should be stated in the program for carrying it out, especially, if the campaign is to be staged near the beginning of school. This program was weak in that it stated that the campaign was to be carried on during the second week of school. Most of the material was not delivered until later than this period. This was the cause of some teachers not carrying out the campaign.
2. In the case of independent school districts, that is, the schools of the larger cities, it seems best to handle the matter through the city superintendent instead of trying to deal with the teacher direct. At least the matter should be taken up with the superintendent at the time that the material is sent to his teachers.
3. The letter "To the Teacher" should be more concise, shorter, and the paragraphs should be briefer.
4. As far as possible there should be but one subject upon which the teacher is to report. In this campaign a request was made to look for the disease, locate English black currants and planted white pine. As is shown in Table II, some teachers reported on one thing, some on another, so that the reports were not uniform in the information that they contained.
5. The report form should be very simple. In filling out the form used in this campaign many teachers listed the owners of currants and gooseberries under the column for black currants so that in some cases it was not clear whether the plantings reported were black currants or other gooseberries and currants.
6. Smaller return envelopes should be used. Those used in this campaign were too large, consequently, they were badly mutilated in the mails and some were lost.
7. The number system that proved so efficient in saving time in the Oregon and Montana campaign should be used. This consisted in giving each county a number and the teachers in that county a number. This combination number should be placed upon the report form as well as the return envelope. It makes possible the rapid checking and classification of replies. If a follow-up system is used a system of this kind will be found to be very helpful.

## XII. Recommended Follow-up Work.

A strictly black currant campaign should be carried out during the spring of 1923. The following campaign is recommended.

### BLACK CURRANT SCHOOL CAMPAIGN

#### I. Object.

A. As an educational follow-up to the fall campaign in order to inform the teachers and students and consequently the general public concerning

4. 1960. 1961. 1962. 1963. 1964. 1965. 1966. 1967. 1968. 1969. 1970. 1971. 1972. 1973. 1974. 1975. 1976. 1977. 1978. 1979. 1980. 1981. 1982. 1983. 1984. 1985. 1986. 1987. 1988. 1989. 1990. 1991. 1992. 1993. 1994. 1995. 1996. 1997. 1998. 1999. 2000. 2001. 2002. 2003. 2004. 2005. 2006. 2007. 2008. 2009. 2010. 2011. 2012. 2013. 2014. 2015. 2016. 2017. 2018. 2019. 2020. 2021. 2022. 2023. 2024. 2025. 2026. 2027. 2028. 2029. 2030. 2031. 2032. 2033. 2034. 2035. 2036. 2037. 2038. 2039. 2040. 2041. 2042. 2043. 2044. 2045. 2046. 2047. 2048. 2049. 2050. 2051. 2052. 2053. 2054. 2055. 2056. 2057. 2058. 2059. 2060. 2061. 2062. 2063. 2064. 2065. 2066. 2067. 2068. 2069. 2070. 2071. 2072. 2073. 2074. 2075. 2076. 2077. 2078. 2079. 2080. 2081. 2082. 2083. 2084. 2085. 2086. 2087. 2088. 2089. 2090. 2091. 2092. 2093. 2094. 2095. 2096. 2097. 2098. 2099. 2100. 2101. 2102. 2103. 2104. 2105. 2106. 2107. 2108. 2109. 2110. 2111. 2112. 2113. 2114. 2115. 2116. 2117. 2118. 2119. 2120. 2121. 2122. 2123. 2124. 2125. 2126. 2127. 2128. 2129. 2130. 2131. 2132. 2133. 2134. 2135. 2136. 2137. 2138. 2139. 2140. 2141. 2142. 2143. 2144. 2145. 2146. 2147. 2148. 2149. 2150. 2151. 2152. 2153. 2154. 2155. 2156. 2157. 2158. 2159. 2160. 2161. 2162. 2163. 2164. 2165. 2166. 2167. 2168. 2169. 2170. 2171. 2172. 2173. 2174. 2175. 2176. 2177. 2178. 2179. 2180. 2181. 2182. 2183. 2184. 2185. 2186. 2187. 2188. 2189. 2190. 2191. 2192. 2193. 2194. 2195. 2196. 2197. 2198. 2199. 2200. 2201. 2202. 2203. 2204. 2205. 2206. 2207. 2208. 2209. 2210. 2211. 2212. 2213. 2214. 2215. 2216. 2217. 2218. 2219. 2220. 2221. 2222. 2223. 2224. 2225. 2226. 2227. 2228. 2229. 2230. 2231. 2232. 2233. 2234. 2235. 2236. 2237. 2238. 2239. 2240. 2241. 2242. 2243. 2244. 2245. 2246. 2247. 2248. 2249. 2250. 2251. 2252. 2253. 2254. 2255. 2256. 2257. 2258. 2259. 2260. 2261. 2262. 2263. 2264. 2265. 2266. 2267. 2268. 2269. 2270. 2271. 2272. 2273. 2274. 2275. 2276. 2277. 2278. 2279. 2280. 2281. 2282. 2283. 2284. 2285. 2286. 2287. 2288. 2289. 2290. 2291. 2292. 2293. 2294. 2295. 2296. 2297. 2298. 2299. 2300. 2301. 2302. 2303. 2304. 2305. 2306. 2307. 2308. 2309. 2310. 2311. 2312. 2313. 2314. 2315. 2316. 2317. 2318. 2319. 2320. 2321. 2322. 2323. 2324. 2325. 2326. 2327. 2328. 2329. 2330. 2331. 2332. 2333. 2334. 2335. 2336. 2337. 2338. 2339. 2340. 2341. 2342. 2343. 2344. 2345. 2346. 2347. 2348. 2349. 2350. 2351. 2352. 2353. 2354. 2355. 2356. 2357. 2358. 2359. 2360. 2361. 2362. 2363. 2364. 2365. 2366. 2367. 2368. 2369. 2370. 2371. 2372. 2373. 2374. 2375. 2376. 2377. 2378. 2379. 2380. 2381. 2382. 2383. 2384. 2385. 2386. 2387. 2388. 2389. 2390. 2391. 2392. 2393. 2394. 2395. 2396. 2397. 2398. 2399. 2400. 2401. 2402. 2403. 2404. 2405. 2406. 2407. 2408. 2409. 2410. 2411. 2412. 2413. 2414. 2415. 2416. 2417. 2418. 2419. 2420. 2421. 2422. 2423. 2424. 2425. 2426. 2427. 2428. 2429. 2430. 2431. 2432. 2433. 2434. 2435. 2436. 2437. 2438. 2439. 2440. 2441. 2442. 2443. 2444. 2445. 2446. 2447. 2448. 2449. 2450. 2451. 2452. 2453. 2454. 2455. 2456. 2457. 2458. 2459. 2460. 2461. 2462. 2463. 2464. 2465. 2466. 2467. 2468. 2469. 2470. 2471. 2472. 2473. 2474. 2475. 2476. 2477. 2478. 2479. 2480. 2481. 2482. 2483. 2484. 2485. 2486. 2487. 2488. 2489. 2490. 2491. 2492. 2493. 2494. 2495. 2496. 2497. 2498. 2499. 2500. 2501. 2502. 2503. 2504. 2505. 2506. 2507. 2508. 2509. 2510. 2511. 2512. 2513. 2514. 2515. 2516. 2517. 2518. 2519. 2520. 2521. 2522. 2523. 2524. 2525. 2526. 2527. 2528. 2529. 2530. 2531. 2532. 2533. 2534. 2535. 2536. 2537. 2538. 2539. 2540. 2541. 2542. 2543. 2544. 2545. 2546. 2547. 2548. 2549. 2550. 2551. 2552. 2553. 2554. 2555. 2556. 2557. 2558. 2559. 2560. 2561. 2562. 2563. 2564. 2565. 2566. 2567. 2568. 2569. 2570. 2571. 2572. 2573. 2574. 2575. 2576. 2577. 2578. 2579. 2580. 2581. 2582. 2583. 2584. 2585. 2586. 2587. 2588. 2589. 2590. 2591. 2592. 2593. 2594. 2595. 2596. 2597. 2598. 2599. 2600. 2601. 2602. 2603. 2604. 2605. 2606. 2607. 2608. 2609. 2610. 2611. 2612. 2613. 2614. 2615. 2616. 2617. 2618. 2619. 2620. 2621. 2622. 2623. 2624. 2625. 2626. 2627. 2628. 2629. 2630. 2631. 2632. 2633. 2634. 2635. 2636. 2637. 2638. 2639. 2640. 2641.

1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific requirements of the task.

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the present status of the blister rust situation as well as the results of the campaign last fall.

B. To secure the location of as many black currant plantings as possible.

The chief blister rust work during the summer season of 1923 in the northwestern states will be the location and eradication of all black currants. This campaign will locate many plantings of black currants in isolated places where they may be overlooked by a scout. The records will serve as a check upon the work of the scouts next summer and enable us to determine how efficient the scouting is being done. It will be a cheap way of locating plantings. Likewise through this preliminary dissemination of information the foundation will be laid for next summer's work.

C. It will keep alive the interest of the teachers and children and consequently the general public in the disease. It will make active scouts of all of these people during the spring and summer months.

## II. Territory.

This campaign should be carried out in at least all of the northern counties in which there is white pine. This would include the following counties.

| <u>County</u> | <u>No. of Teachers</u> | <u>County</u> | <u>No. of Teachers</u> |
|---------------|------------------------|---------------|------------------------|
| Boundary      | 47                     | Benewah       | 66                     |
| Bonner        | 136                    | Latah         | 174                    |
| Kootenai      | 131                    | Clearwater    | 35                     |
| Shoshone      | 127                    | Nez Perce     | 142                    |
|               |                        | Idaho         | 156                    |
|               |                        | Total         | 1,014                  |

This would coincide with the school campaign that is to be carried out in Montana.

In order to cover all of the avenues of approach from the south it may be desirable to include all counties lying north of the Snake River in Idaho.

If the black currant campaign in Idaho is to be of equal intensity over the entire state it may be desirable to carry out this campaign over the entire state. The territory to be covered depends somewhat upon the general plan of the blister rust work that is to be carried out over the entire state.

## III. Supplies.

1,050 white, franked envelopes 4-1/2 x 10-1/2"

1,050 white envelopes, with return address 4 x 10"

Addressed to Dr. Henry Schmitz,

School of Forestry, University of Idaho,  
Moscow, Idaho

1,050 Synopsis of Blister Rust.



11. 10. 1931. 31. 10. 1931.

- 2,000 franked post cards for follow-up work and acknowledging reports.
- 1,050 letters to teachers (see sample copy)
- 1,050 report forms on paper that will take ink. (see sample)
- 1,050 suggestions to teachers (see sample)

If the campaign is carried out over the entire state the number for the supplies would be 4,000 instead of 1,050.

#### IV. Procedure.

1. Date, April 16 to 20, 1923.
2. Envelopes to be addressed at the Seattle Office, or at Moscow.
3. Return envelopes.  
A stamp to be made and these stamped either at Seattle or Moscow.
4. Letters and forms to be mimeographed at the Seattle office.
5. Letters will be stuffed and mailed from Moscow about April 11.
6. Replies will be returned to Moscow.
7. If the necessary clerical help is not available at Moscow a man will be relieved from quarantine work about May 1, to handle the replies and put into effect the follow-up system.
8. This plan is to receive the approval of Dr. Schmitz and the State Superintendent of Public Instruction.

#### COOPERATIVE BLISTER RUST CONTROL

Superintendent of Public Instruction,  
Idaho State Department of Agriculture,  
Forestry School, University of Idaho,  
Bureau of Plant Industry,  
U. S. Department of Agriculture.

Moscow, Idaho,  
April 15, 1923.

#### To the Teacher:

The White Pine Blister Rust School Campaign carried out during the fall of 1923 in the schools of Idaho was very successful. A hearty response was received from the teachers. No blister rust was found in Idaho.

Last summer's survey, however, in the northwestern states and British Columbia revealed the disease generally distributed in the coast region of Washington and in British Columbia. Moreover, it was found at Revelstoke and Beaton, British Columbia. These points are only about one hundred miles north of the vast white pine stands in Idaho and Montana. This is the infection area that now threatens the vast inland white pine stands. Canada is doing and will do all that she can to protect us.

On our part, every effort must now be made to stop the spread of the disease into the valuable timber stands of Idaho. Past experience with the disease has proved that the English Black Currant is the most potent factor in establishing and spreading the disease in a community. This currant is generally of little commercial value in a community. Therefore the experts of the



1. The first thing I noticed when I stepped out of the plane was the cold air. It was a sharp contrast to the warm air of the plane. I had heard that the weather in the north was cold, but I didn't realize it would be this cold. I was wearing a heavy coat, but it didn't seem to be enough. I shivered as I walked towards the car. The driver was a young man with a friendly smile. He greeted me and helped me with my luggage. I felt a bit nervous, but he made me feel at ease. We drove through a beautiful landscape with rolling hills and small towns. The scenery was breathtaking. I had never seen anything like this before. I was in good luck. The weather was perfect for a drive. The sun was shining, and the roads were clear. I was excited to see what the rest of the day would bring.

2. The second thing I noticed was the friendly people. Everywhere I went, I was greeted with a warm smile. The people were so kind and helpful. I had heard that the people in the north were cold, but I was wrong. They were the warmest people I had ever met. I was in good luck. The weather was perfect for a drive. The sun was shining, and the roads were clear. I was excited to see what the rest of the day would bring.

3. The third thing I noticed was the beautiful scenery. The landscape was so beautiful. I had never seen anything like this before. The hills were rolling, and the towns were small and charming. The scenery was breathtaking. I was in good luck. The weather was perfect for a drive. The sun was shining, and the roads were clear. I was excited to see what the rest of the day would bring.

### THE FIRST DAY

4. The first day was a great success. I had heard that the weather in the north was cold, but I didn't realize it would be this cold. I was wearing a heavy coat, but it didn't seem to be enough. I shivered as I walked towards the car. The driver was a young man with a friendly smile. He greeted me and helped me with my luggage. I felt a bit nervous, but he made me feel at ease. We drove through a beautiful landscape with rolling hills and small towns. The scenery was breathtaking. I had never seen anything like this before. I was in good luck. The weather was perfect for a drive. The sun was shining, and the roads were clear. I was excited to see what the rest of the day would bring.

### THE SECOND DAY

5. The second day was also a great success. I had heard that the weather in the north was cold, but I didn't realize it would be this cold. I was wearing a heavy coat, but it didn't seem to be enough. I shivered as I walked towards the car. The driver was a young man with a friendly smile. He greeted me and helped me with my luggage. I felt a bit nervous, but he made me feel at ease. We drove through a beautiful landscape with rolling hills and small towns. The scenery was breathtaking. I had never seen anything like this before. I was in good luck. The weather was perfect for a drive. The sun was shining, and the roads were clear. I was excited to see what the rest of the day would bring.

6. The third day was also a great success. I had heard that the weather in the north was cold, but I didn't realize it would be this cold. I was wearing a heavy coat, but it didn't seem to be enough. I shivered as I walked towards the car. The driver was a young man with a friendly smile. He greeted me and helped me with my luggage. I felt a bit nervous, but he made me feel at ease. We drove through a beautiful landscape with rolling hills and small towns. The scenery was breathtaking. I had never seen anything like this before. I was in good luck. The weather was perfect for a drive. The sun was shining, and the roads were clear. I was excited to see what the rest of the day would bring.

7. The fourth day was also a great success. I had heard that the weather in the north was cold, but I didn't realize it would be this cold. I was wearing a heavy coat, but it didn't seem to be enough. I shivered as I walked towards the car. The driver was a young man with a friendly smile. He greeted me and helped me with my luggage. I felt a bit nervous, but he made me feel at ease. We drove through a beautiful landscape with rolling hills and small towns. The scenery was breathtaking. I had never seen anything like this before. I was in good luck. The weather was perfect for a drive. The sun was shining, and the roads were clear. I was excited to see what the rest of the day would bring.

United States Department of Agriculture and of the State of Idaho have decided that the most important step to take now in combating the disease is to locate all black currants, inspect them frequently and urge their eradication in every community. This will retard the natural spread of the disease.

All state and federal agencies are cooperating in this work. In this work the teacher and her pupils can help in a very material and inexpensive way. Again we ask for your active cooperation. Again call the attention of your students to the disease (see enclosed Synopsis of Blister Rust). Ask your students to search for black currants at their home as well as at their neighbors and report to you any that they may find.

If you will record the information reported by the students on the form and mail it in the enclosed, addressed envelope, you will have aided greatly in this work. If no black currants are found please report this fact.

The students of course will also be on the lookout for the disease and report anything that is suspicious.

Thanking you for your past and future cooperation in this work, I am,

Very truly yours,

Henry Schmitz,  
Forest Pathologist,  
School of Forestry, University of Idaho,  
Collaborator, U. S. Department of Agriculture.

P. S. I am enclosing as a suggestion several methods which teachers have used in adapting the school campaign to their regular work, with the hope that they may be helpful in carrying out his campaign.

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## SUGGESTIVE METHODS OF PRESENTING THE BLISTER RUST PROGRAM TO THE STUDENT

The following methods of adapting the Blister Rust Control School Campaign to the regular school program were used by teachers in the fall campaign. They are given as a suggestion to the busy teacher.

1. As an exercise in writing the student may be required to write a paragraph on the White Pine Blister Rust after the teacher has read the "Synopsis of Blister Rust" to them. They could then go out looking for black currant plantings and be able to explain why they were looking for them.

2. As a letter writing exercise, the student after searching for black currants may write his report in the form of a business letter addressed to the U. S. Department of Agriculture. The results in these letters could be tabulated by the teacher or the letters sent in direct as a report.

3. Botany classes may be required to collect leaves and stems of black currants as a study in buds and leaves of plants.

4. Agricultural classes and general science classes may use the subject of Blister Rust as an example for a discussion of how diseases effect the economic values of crops. Then the student could be asked to help in this particular problem by locating the black currants in his community.

5. In art study classes the teacher may have the students collect currant leaves, draw or paint them and then turn in the material to the teacher.

6. The study of pine trees and black currants as well as other currants and gooseberries can be made the basis for spring field trips.

7. Competition between divisions of a class, of different classes and of different grades over a period of a week as to which group can find the most plantings of black currants may be used effectively in this work.

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## LOCATION OF ENGLISH BLACK CURRENTS

| Town | County | School District No. | Date |
|------|--------|---------------------|------|
|------|--------|---------------------|------|

| Teacher's Name | Address | No. Pupils | Grade |
|----------------|---------|------------|-------|
|----------------|---------|------------|-------|

**INSTRUCTIONS:** Have each student report whether he has any black currants growing at his home. He should also determine by inquiry or examination whether his neighbors possess any black currants. If uncertain whether the currants are black, send in samples of the leaves with this report. See Synopsis of Blister Rust for description of methods of identifying the black currant.

[illegible]



## SYNOPSIS OF BLISTER RUST.

Pine Attacked. This disease is one which attacks only the white (five-needed) pines. The five-needed pines in the West are the western white pine, the sugar pine, the white barked pine and the limber pine.

The Disease. It is a parasitic plant that obtains all of its feed from another plant. It is not an insect. It grows under the bark of the pine and thus eventually kills it. The disease spends part of its life on the pine and part on the leaves of the currants and gooseberries. To complete its life growth it must go from currant to white pine and back to currant. It cannot spread from pine to pine direct. It can spread from currant to currant or gooseberry to gooseberry.

Distribution of the Disease in the West. The disease besides occurring in the East is quite generally distributed in all the coast region of British Columbia and Washington. Also a heavy infection area occurs at Revelstoke and Beaton, British Columbia, points about one hundred miles north of the pine stands of Idaho and Montana. Scouting during the year of 1922 failed to reveal the disease in any other localities in the Northwest. It is probably firmly established where it now exists.

Damage. In some areas in British Columbia the disease is epidemic. In one area near Daisy Lake, British Columbia, where the disease has been for about ten years 90 per cent of the white pine trees are dead. In another area in an older stand of white pine near Daisy Lake 40 per cent of the trees are now dead and in ten years probably over 90 per cent will be dead.

Importance of the English Black Currant. Past experience with this diseased has well established the importance of the English black currant. It is many times more susceptible to the disease, and develops the disease more rapidly and abundantly than any other currants or gooseberries. Consequently, it spreads the disease more rapidly and much further. New infections of blister rust are generally found centering around a planting of black currants.

What is to be done. In analyzing the foregoing situation the experts of the U. S. Department of Agriculture and of the different states have decided that an effort must be made to keep the disease where it now is by employing every means possible to hinder the natural or artificial spread. Regulations have been passed forbidding the shipment of currant, gooseberry or white pine plants out of the infected areas. The next most necessary measure to take is to locate and inspect all plantings of black currants and at the same time urge their owners to destroy them. The inspection of the plants will determine whether the disease is already present. Their eradication will delay the natural spread of the disease as well as reduce very greatly the possibility of the future establishment of the disease in that community. The general public is asked to help, can help and should help in this work.

IT COSTS LESS TO KEEP IT OUT THAN IT WILL TO COMBAT IT WHEN IT ONCE IS INTRODUCED.

How to tell the English Black Currant from other Currants. This currant has a very distinct skunk-like odor which is evident when near the plant or if a portion of a twig or leaf is slightly crushed. Other currants and gooseberries have no definite odor. Also on the under sides of the leaves are small yellowish minute spots visible to the naked eye. These are uniformly distributed over the leaf. It is from these yellowish spots that the peculiar odor originates. Further, the fruit is black.



1. The first part of the report deals with the general situation of the country. It is a very interesting and informative study of the country's development. The author has done a great deal of research and has gathered a wealth of material. The report is well written and is easy to read. It is a valuable contribution to the study of the country's development.

2. The second part of the report deals with the economic situation of the country. It is a very interesting and informative study of the country's economic development. The author has done a great deal of research and has gathered a wealth of material. The report is well written and is easy to read. It is a valuable contribution to the study of the country's economic development.

3. The third part of the report deals with the social situation of the country. It is a very interesting and informative study of the country's social development. The author has done a great deal of research and has gathered a wealth of material. The report is well written and is easy to read. It is a valuable contribution to the study of the country's social development.

4. The fourth part of the report deals with the political situation of the country. It is a very interesting and informative study of the country's political development. The author has done a great deal of research and has gathered a wealth of material. The report is well written and is easy to read. It is a valuable contribution to the study of the country's political development.

5. The fifth part of the report deals with the cultural situation of the country. It is a very interesting and informative study of the country's cultural development. The author has done a great deal of research and has gathered a wealth of material. The report is well written and is easy to read. It is a valuable contribution to the study of the country's cultural development.

6. The sixth part of the report deals with the environmental situation of the country. It is a very interesting and informative study of the country's environmental development. The author has done a great deal of research and has gathered a wealth of material. The report is well written and is easy to read. It is a valuable contribution to the study of the country's environmental development.

SCHOOL CAMPAIGN IN IDAHO

- I. Campaign to be centered in week September (11-16) or (18-23).
- II. Plans to receive the o. k. of:  
Dr. Enoch R. Bryan, Commissioner of Education, Boise, Idaho.  
Miss E. Redfield, Supt., Public Instruction, Boise, Idaho.  
C. W. Hungerford, Pathological Experiment Station, Moscow, Idaho.  
W. H. Wicks, Chief, Bureau Plant Industry, Boise, Idaho.  
S. B. Detwiler, Head, Office Blister Rust Control, Washington, D. C.  
Chief, Bureau of Plant Industry, U. S. D. A.  
Post Office Department, Washington, D. C.
- III. During this week the cooperation of county agents to be asked by a direct letter of instructions from head of Extension Division (Ex.2).
- IV. Mr. Wicks to write a letter to all his inspectors regarding their co-operation.
- V. Miss Redfield or Dr. Bryan to send a letter to county superintendents (Exhibit 3).
- VI. County superintendent and state superintendent to take up the matter with superintendents, principals and teachers.
- VII. Miss Redfield to send letter to all teachers (Exhibit 4), and form report to be filled out by teacher (Exhibit 5). Also, colored circular with attached statement (Exhibit 6), and large poster, etc.
- VIII. All return letters to go to Professor C. W. Hungerford, Agricultural Experiment Station, University of Idaho, Moscow, Idaho.
  1. Mail to be handled by Hungerford's assistant, Mr. Brown.
  2. Mr. Brown will examine all specimens, record replies, and refer doubtful material to Prof. Hungerford, and file information in a systematic way for the information of Mr. Hungerford and the Blister Rust Office.
  3. Mr. Brown will make a special report on the results of the campaign at the end of the campaign.
  4. Requests for special information regarding other disease are to be referred to Mr. Hungerford.
  5. Mr. Brown will keep accurate check of all replies and send out follow-up posters in cases where replies have not been received in due time - one week after September 16.
- IX. Entire program to be under the supervision of C. R. Stillinger.  
  
Active forces in use.
  1. Schools (Exhibit 7)
  2. List of county superintendents (Exhibit 8)
  3. List of city superintendents (Exhibit 9)



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• 1941-1942: 200-400 birds

1997 2500000

Moscow, Idaho,  
September 9, 1922.

Mr. John Jones, County Agent,  
Latah County,  
Moscow, Idaho.

Dear Mr. Jones:

During the week of September 11-16 the U. S. Department of Agriculture in cooperation with the State Department of Agriculture, the Idaho Agricultural College, the Extension Division, and the State Department of Education will carry on through the public schools, the inspection of all currants, gooseberries and white pines for White Pine Blister Rust. Further, an effort will be made to locate all black currants and planted white pine in the state.

The inclosed bulletin is self explanatory of the situation. The disease has not been found in Idaho but has been found in British Columbia and in the Puget Sound region of Washington. Due to the extent of the area to be covered, all agencies are being used to find the disease if it is present so that it may be located and eradicated before it has become established in our native forest.

During this week and afterward you will no doubt have many inquiries regarding the disease and there will be reports of the disease given to you. Please forward these reports to Prof. C. W. Hungerford, Pathologist, Idaho Experiment Station, Moscow, Idaho.

I am inclosing for your information the details of instructions that have been sent to each teacher. Get in touch with the County Superintendent of your county as soon as possible, explain the purpose of the work to her and try to secure her cooperation in this matter. Anything you can do by personal conferences with school superintendents or teachers will aid greatly in the effectiveness of the general plan. Likewise any information that you can send regarding the location of black currant plantings or plantings of white pine or any specimens that look like the disease will be an aid that will be much appreciated.

Thanking you now for the cooperation I am sure you will give,  
I remain,

Very sincerely yours,

Head Extension Division

CONFIDENTIAL

CONFIDENTIAL

CONFIDENTIAL

The following information was obtained from a confidential source who has provided reliable information in the past. It is being furnished to you for your information only. It is not to be distributed outside your office.

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CONFIDENTIAL

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Seattle, Washington,  
August, 1922.

Miss Jennie Jones,  
County Superintendent Latah County,  
Moscow, Idaho.

Dear Miss Jones:

During the second week of school the United States Department of Agriculture in cooperation with the State Department of Agriculture, the Idaho Agricultural Experiment Station, and the State Department of Education will make a special effort through the use of the public school children to determine whether the white pine blister rust occurs in Idaho. I am enclosing for your information literature concerning the disease and the program of action asked of the teacher.

The State Superintendent of Public Instruction has given her endorsement of the program and at this time I am asking you to consider the plan. If you decide to cooperate with us in this work I shall appreciate it very much if you will sign the enclosed letter or write one covering the endorsement of the program so that it can be enclosed with the outlines, literature, etc., which we are forwarding to the teachers.

I shall appreciate it if I may hear from you soon so that the supplies may be prepared. Thanking you now for the full cooperation that I am sure you will give, I am,

Very truly yours,

Assistant Pathologist.

CRS  
Enclosure.

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## COOPERATIVE BLISTER RUST CONTROL

Supt. of Public Instruction,  
State Dept. of Education and  
Bureau of Plant Industry,  
U. S. Dept. of Agriculture,  
Cooperating.

Boise, Idaho,  
September 9, 1922.

To the Teacher:

The enclosed circular is, I believe, self-explanatory. Idaho has more white pine than any other state. Hence if this destructive disease becomes established in the native white pine timber it will do inestimable damage to one of our great natural resources. The State Department of Agriculture, the Idaho Experiment Station and the State Department of Education, in cooperation with the United States Department of Agriculture, has undertaken to utilize the aid of our public school children to locate this disease if it occurs in Idaho. Because of the vast territory to be covered in a short time it is impossible for the state and federal agents to inspect it. Consequently you and your pupils have an opportunity to be of real service.

The effectiveness and thoroughness of this search for the White Pine Blister Rust depends upon you as a teacher. The location of all black currants and planted white pine is of especial importance. Please read the enclosed circular to your pupils, show them the pictures and describe the disease to them. Ask each pupil, as he goes to and from school or about his home, to look for the disease on both cultivated and wild currants, gooseberries, and white pines. Of course all are to be on the lookout for the disease and report anything of possible importance regarding this matter. Have them bring in to you specimens of anything that looks like the disease on white pine, currants and gooseberries. Likewise ask them to report to you all plantings of cultivated black currants and planted white pines which they locate. If there is any doubt as to whether the currants are the black variety or the pines are white pines please have the student bring in specimens which you can forward for identification. All specimens that are brought in by a student should be placed in a folded paper or preferably an envelope. On the outside of this envelope place the student's name, the location of the plants and the name of the owner. At the end of the week send me your report on the enclosed form in the addressed envelope provided together with all specimens. The report can be mailed without postage, but if specimens are enclosed, postage is required. If desired, you will be reimbursed for postage.

Through such a survey the disease may be located in a community before it has become widely distributed and consequently it can be eradicated before it reaches our native timber. Thus one of the most destructive diseases in the United States will be prevented from becoming established in Idaho and thousands of dollars will be saved for the agricultural interests of the state.

Thanking you now for the cooperation I am sure you will give, I remain,

Very sincerely yours,  
Ethel M. Redfield,  
Collaborator.

Enclosure.

[illegible]

المسألة السادسة

REPORT BY TEACHER ON  
STUDENT INSPECTION FOR WHITE PINE BLISTER RUST.

STATE DEPARTMENT OF EDUCATION  
AND  
BUREAU OF PLANT INDUSTRY,  
U. S. DEPARTMENT OF AGRICULTURE  
COOPERATING

THIS REPORT IS TO BE SUBMITTED AT THE END OF THE SECOND WEEK OF YOURSCHOOL. A REPORT IS TO BE MADE UNDER ANY AND ALL CIRCUMSTANCES

Town \_\_\_\_\_  
 County \_\_\_\_\_  
 School District No. \_\_\_\_\_  
 Name of School \_\_\_\_\_  
 Grade \_\_\_\_\_

Teacher's name ----- Address -----  
No. pupils participating ----- Date -----

## SUMMARY OF STUDENTS REPORTS

**INSTRUCTIONS:** As far as possible get the location from the students of all cultivated English Black currants and planted white pine. Submit specimens of everything that looks like the disease. Include specimens in an envelope or paper bearing name of student, location of plants and name and address of owner.

[illegible]

[illegible]



HOW THE SCHOOL CHILDREN OF IDAHO CAN HELP TO  
GUARD IDAHO'S FORESTS AGAINST THE WHITE PINE BLISTER RUST.

Idaho has \$579,000,000 worth of western white pine which must be guarded against the invasion of this destructive Blister Rust.

This disease has already appeared in southwestern British Columbia and in the northern portion of the Puget Sound region of Washington.

It is not known to occur as yet in Idaho but for the safety of our forests a careful search for the disease must be made in all parts of the state so that if it does occur in Idaho it may be discovered and wiped out before it has become established beyond eradication.

The boys and girls can act as detectives to find the disease if it should be present. If the disease is found the State Department of Agriculture and the National Government will then take steps to get rid of it immediately. Study the government folder and the pictures until you know all about the disease and what it looks like. Then go out and hunt for signs of the rust disease especially on black currants and send in all suspicious specimens for identification.



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## SCHOOL ORGANIZATION - IDAHO

| <u>County</u> | <u>Number<br/>Districts</u> | <u>Number<br/>Teachers</u> | <u>Number<br/>Students</u> | <u>High School<br/>Students</u> |
|---------------|-----------------------------|----------------------------|----------------------------|---------------------------------|
| Ada           | 62                          | 305                        | 10,072                     | 1,695                           |
| Adams         | 30                          | 42                         | 1,011                      | 56                              |
| Bannock       | 52                          | 237                        | 8,778                      | 756                             |
| Bear Lake     | 22                          | 86                         | 3,129                      |                                 |
| Benewah       | 30                          | 74                         | 1,941                      | 177                             |
| Bingham       | 44                          | 189                        | 7,000                      | 640                             |
| Blaine        | 22                          | 50                         | 1,638                      | 152                             |
| Boise         | 21                          | 22                         | 516                        | 0                               |
| Bonner        | 49                          | 133                        | 3,653                      | 376                             |
| Bonneville    | 52                          | 155                        | 6,266                      | 509                             |
| Boundary      | 18                          | 49                         | 1,294                      | 124                             |
| Butte         | 15                          | 54                         | 1,009                      | 90                              |
| Camas         | 21                          | 26                         | 571                        | 23                              |
| Canyon        | 49                          | 241                        | 9,620                      | 1,223                           |
| Caribou       | 10                          | 23                         | 619                        | 61                              |
| Cassia        | 47                          | 143                        | 5,151                      | 425                             |
| Clark         | 15                          | 25                         | 581                        | 42                              |
| Clearwater    | 35                          | 63                         | 1,315                      | 150                             |
| Custer        | 22                          | 40                         | 962                        | 93                              |
| Elmore        | 22                          | 54                         | 1,438                      | 342                             |
| Franklin      | 28                          | 92                         | 3,861                      | 94                              |
| Fremont       | 34                          | 117                        | 3,648                      | 327                             |
| Gem           | 24                          | 60                         | 2,166                      | 241                             |
| Gooding       | 15                          | 86                         | 2,333                      | 378                             |
| Idaho         | 87                          | 118                        | 3,608                      | 275                             |
| Jefferson     | 12                          | 97                         | 3,674                      | 362                             |
| Jerome        | 13                          | 66                         | 2,222                      | 240                             |
| Kootenai      | 78                          | 193                        | 6,130                      | 631                             |
| Latah         | 94                          | 189                        | 5,819                      | 701                             |
| Lemhi         | 32                          | 50                         | 1,375                      | 89                              |
| Lewis         | 40                          | 75                         | 1,759                      | 251                             |
| Lincoln       | 14                          | 43                         | 915                        | 120                             |
| Madison       | 22                          | 85                         | 3,377                      | 150                             |
| Minidoka      | 17                          | 92                         | 3,112                      | 350                             |
| Nez Perce     | 70                          | 149                        | 4,918                      | 564                             |
| Oneida        | 30                          | 75                         | 2,896                      | 244                             |
| Owyhee        | 33                          | 61                         | 1,317                      | 70                              |
| Payette       | 15                          | 64                         | 2,853                      | 383                             |
| Power         | 28                          | 67                         | 1,796                      | 128                             |
| Shoshone      | 23                          | 126                        | 3,321                      | 461                             |
| Teton         | 20                          | 51                         | 1,363                      | 136                             |
| Twin Falls    | 47                          | 269                        | 8,746                      | 1,277                           |
| Valley        | 26                          | 36                         | 983                        | 69                              |
| Washington    | 44                          | 97                         | 3,161                      | 395                             |
| TOTALS 44     | 1,490                       | 4,350                      | 141,906                    | 14,840                          |



## LIST OF COUNTY SUPERINTENDENTS

| <u>County</u> | <u>County Seat</u> | <u>County Superintendents</u> |
|---------------|--------------------|-------------------------------|
| Ada           | Boise              | Miss Lura V. Paine            |
| Adams         | Council            | Mrs. Oriana M. Hubbard        |
| Bannock       | Pocatello          | Miss Nora Boyum               |
| Bear Lake     | Paris              | Miss Letha Dunford            |
| Benewah       | St. Maries         | Miss Leila Clifford           |
| Bingham       | Blackfoot          | Mrs. Grace Faulconer          |
| Blaine        | Hailey             | Miss Beulah E. Coats          |
| Boise         | Idaho City         | Mrs. Halley Skinner           |
| Bonner        | Sandpoint          | Mrs. Jessie Hawkins Tuck      |
| Bonneville    | Idaho Falls        | Jessie H. Nielsen             |
| Boundary      | Bonniers Ferry     | Mrs. Caroline W. Flood        |
| Butte         | Arco               | Mrs. Louisa Pratt             |
| Camas         | Fairfield          | Mrs. Pearle Lamson-Orr        |
| Canyon        | Caldwell           | Miss Margaret Knowlton        |
| Caribou       | Soda Springs       | A. J. Gronewald               |
| Cassia        | Burley             | Miss Mae Lowe                 |
| Clarke        | Dubois             | Mrs. Anna Hales               |
| Clearwater    | Orofino            | Miss Evelyn S. Merwin         |
| Custer        | Challis            | Mrs. Florence G. Rowles       |
| Elmore        | Mountain Home      | Mrs. Pearl S. Barber          |
| Franklin      | Preston            | John Johnson                  |
| Fremont       | St. Anthony        | A. C. Lambert                 |
| Gem           | Emmett             | Mrs. Ella Reed                |
| Gooding       | Gooding            | Miss Douglas Hilts            |
| Idaho         | Grangeville        | Leonard Case                  |
| Jefferson     | Rigby              | W. S. Burton                  |
| Jerome        | Jerome             | Mrs. June I. Kearney          |
| Kootenai      | Coeur d' Alene     | R. C. Egbers                  |
| Latah         | Moscow             | Miss Lillian Skattaboo        |
| Lemhi         | Salmon             | Mrs. Ethel G. Watkins         |
| Lewis         | Nez Perce          | Mrs. Norma Wilson Bettie      |
| Lincoln       | Shoshone           | Mrs. Leah M. Burnside         |
| Madison       | Rexburg            | Wm. B. Oldham                 |
| Minidoka      | Rupert             | Mrs. Ida E. Sullivan          |
| Nez Perce     | Lewiston           | Miss Ethel Gilson             |
| Oneida        | Malad              | J. C. Tovey                   |
| Owyhee        | Silver City        | Mrs. Belle V. Cook            |
| Payette       | Payette            | Miss Anna Pearson             |
| Power         | American Falls     | Miss Goldie Drake             |
| Shoshone      | Wallace            | Mrs. Mary J. Barnes           |
| Teton         | Driggs             | Leon M. Strong                |
| Twin Falls    | Twin Falls         | Miss Brittomart Wolfe         |
| Valley        | Cascade            | Mrs. Tirza J. Wayland         |
| Washington    | Weiser             | Miss M. Gladys Houston        |





## IDAHO'S INDEPENDENT SCHOOL DISTRICTS

| Dist.<br>No. | Town            | Name of<br>Superintendent |
|--------------|-----------------|---------------------------|
| 1            | American Falls  | W. R. Wallis              |
| *1           | Boise           | P. J. Zimmers             |
| 8            | Blackfoot       | Ernest D. Bloom           |
| 4            | Bonners Ferry   | T. S. Herr                |
| 3            | Buhl            | J. Henry Allen            |
| 1            | Burley          | H. M. Broadbent           |
| 28           | Caldwell        | J. J. Rae                 |
| 1            | Coeur d' Alene  | Theo. B. Shank            |
| *9           | Emmett          | Geo. D. Knipe             |
| 10           | Gooding         | W. D. Shadwick            |
| 1            | Idaho Falls     | R. H. Snyder              |
| 33           | Jerome          | John I. Hillman           |
| 2            | Kimberly        | J. F. Johnston            |
| *1           | Lewiston        | Joel Jenifer              |
| 1            | Malad           | David Wangsgard           |
| 1            | Montpelier      | W. E. Morgan              |
| 5            | Moscow          | P. H. Soulen              |
| 6            | Mountain Home   | Hugh H. Nixon             |
| 12           | Mullan          | H. H. Hoffman             |
| 37           | Nampa           | W. F. Weizend             |
| 32           | Payette         | J. E. Turner              |
| 1            | Pocatello       | Walter R. Siders          |
| 1            | Preston         | J. W. Condie              |
| 1            | Rexburg         | Willis A. Smith           |
| 5            | Rigby           | Karl G. Messer            |
| 1            | Rupert          | Ira Tweedy                |
| 1            | Sandpoint       | J. L. Breckengridge       |
| 2            | St. Anthony     | Frances Hargis            |
| 1            | St. Maries      | E. LeGrande Cherry        |
| 1            | Twin Falls      | M. C. Mitchell            |
| 8            | Wallace         | C. D. Brock               |
| 6            | Wardner-Kellogg | Mrs. Laura Butz           |
| 1            | Weiser          | D. C. Neifert             |

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UNITED STATES DEPARTMENT OF AGRICULTURE  
Bureau of Plant Industry

Blister Rust Control.  
429 Lyon Bldg.,

Seattle, Washington,  
August 3, 1922.

Miss Laura V. Paine,  
County Superintendent of Ada County,  
Boise, Idaho.

Dear Miss Paine:

White Pine Blister Rust, a very destructive pest of the white pines, has recently been found in British Columbia and the Puget Sound region of Washington. At present every effort is being made to locate this disease if it occurs in Idaho on planted white pine or cultivated gooseberries and currants. so that it may be stamped out before it reaches the native timber.

During the second week of school the United States Department of Agriculture in cooperation with the State Department of Agriculture, the Idaho Agricultural Experiment Station, and the State Department of Education will make a special effort through the use of public school children to determine whether the white pine blister rust occurs in Idaho. I am enclosing for your information literature concerning the disease and the program of action asked of the teacher.

The State Superintendent of Public Instruction has given here endorsement of the program and at this time I am asking you to consider the plan. If you decide to cooperate with us in this work I shall appreciate it very much if you will sign the enclosed letter or write one covering the endorsement of the program so that it can be inclosed with the outlines, literature, etc., which we are forwarding to the teacher.

I am enclosing an addressed envelope for your reply and shall appreciate it if I may hear from you soon so that the supplies may be prepared. Thanking you now for the full cooperation that I am sure you will give, I am,

Very truly yours,

C. R. Stillinger,  
Pathologist.

CONFIDENTIAL - SECURITY INFORMATION

ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED

DATE 11/11/01 BY 1045

REASON FOR DECLASSIFICATION: 25X, 1.4

DATE 11/11/01 BY 1045

CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

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CONFIDENTIAL - SECURITY INFORMATION

CONFIDENTIAL - SECURITY INFORMATION

COUNTY SUPERINTENDENT OF SCHOOLS  
Lewis County

Nez Perce, Idaho,  
September 1, 1922.

To the Teachers  
of Lewis County:

I heartily endorse this plan in assisting to protect the vast white and sugar pine stands of the western states. School children while engaged in this work will render invaluable service to the commonwealth. Incidentally they will gain for themselves a greater interest in plant life and will come to better appreciate the sciences which are fundamental in agriculture and forestry. Therefore, I wish to urge you to cooperate fully and to carry out this program as thoroughly as possible. We can do a real service in this way.

Very truly yours,

Etta Brown,

County Superintendent.





COOPERATIVE BLISTER RUST CONTROL

Supt. of Public Instruction,  
State Dept. of Education and  
Bureau of Plant Industry,  
U. S. Department of Agriculture,  
Cooperating.

Boise, Idaho,  
September 1, 1922.

TO THE COUNTY SUPERINTENDENTS OF IDAHO,

GREETINGS:

Would you kindly oblige me by sending a special typewritten list of your teachers, their addresses and the opening dates of their schools to Frank A. Brown C/o University Extension Service, Capital Building, Boise, Idaho? This list is wanted in connection with cooperative educational work on white pine blister rust, which, as you know, is threatening the enormous white pine stands of Idaho. A copy of the letter to be sent to each teacher is enclosed; this will explain the school campaign in detail.

In case there are positions yet unfilled and the names of the teachers are unknown, please give the address of the school so that the literature may be forwarded and reach the teacher on time.

Trusting that this list will be forwarded at your earliest convenience and thanking you for your cooperation,

Very truly yours,

Ethel E. Redfield,

Collaborator

CONFIDENTIAL

Subject: [illegible]  
Reference: [illegible]  
Date: [illegible]

[illegible]

[illegible]

[illegible paragraph of text]

[illegible paragraph of text]

[illegible paragraph of text]

COOPERATIVE BLISTER RUST CONTROL

Supt. of Public Instruction,  
State Dept. of Education and  
Bureau of Plant Industry,  
U. S. Dept. of Agriculture,  
Cooperating.

Boise, Idaho,  
September 11, 1922.

TO THE COUNTY SUPERINTENDENTS OF IDAHO,  
GREETINGS:

On September 1 I wrote you asking for a list of the teachers in your county for the cooperative educational work on white pine blister rust control. Up to this time, the list from your county has not been received. It is very important in the conduct of this campaign, if it is to prove effective, to have the names of your teachers as soon as we can get them.

A request has been sent to the city superintendents of the Class A., Independent School Districts for lists of their teachers. It will not be necessary, therefore, for you to include these districts unless you already have the names.

If you have not already forwarded this list, I would appreciate it very much if you would do so at your earliest convenience.

Cordially yours,

Ethel E. Redfield,

Collaborator.

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COOPERATIVE BLISTER RUST CONTROL

Supt. of Public Instruction,  
State Dept. of Education and  
Bureau of Plant Industry,  
U. S. Dept. of Agriculture,  
Cooperating.

Boise, Idaho,  
September 11, 1922.

TO THE CITY SUPERINTENDENTS,  
CLASS A INDEPENDENT SCHOOL DISTRICTS,

GREETINGS:

Would you kindly oblige me by sending a special typewritten list of your teachers, their addresses and the opening dates of their schools to Frank A. Brown, C/o University Extension Service, Capitol Building, Boise, Idaho? This list is wanted in connection with cooperative educational work on white pine blister rust, which, as you know, is threatening the enormous white pine stands of Idaho. A copy of the letter to be sent to each teacher is enclosed; this will explain the school campaign in detail. There is also being sent under another cover a set of the literature which will be sent to each of your teachers.

In order for this campaign to be a success in every way, it is very important that this list of teachers be received immediately. Your cooperation to this extent would be greatly appreciated, I assure you.

Very cordially yours,  
Ethel E. Hedfield,

Collaborator.



COOPERATIVE BLISTER RUST CONTROL

Supt. of Public Instruction,  
State Dept. of Education and  
Bureau of Plant Industry,  
U. S. Department of Agriculture,  
Cooperating.

Boise, Idaho,  
September 21, 1922

TO THE CITY SUPERINTENDENTS,  
CLASS A INDEPENDENT SCHOOL DISTRICTS,

GREETINGS:

On September 11, I wrote you asking for a list of the teachers in your district for cooperative educational work on white pine blister rust control. Up to this time, the list from your district has not been received. It is very important in the conduct of this campaign, if it is to prove effective, to have the names of your teachers as soon as we can possibly get them.

You will oblige me very much if you would forward this list IMMEDIATELY to Frank A. Brown, C/o University Extension Service, Capitol Building, Boise, Idaho.

Sincerely,  
Ethel E. Redfield,

State Superintendent of Public  
Instruction.

Collaborator.



WESTERN UNION TELEGRAM

Leonard Case,  
County Superintendent,  
Grangeville, Idaho.

Boise, Idaho, Sept. 23, '22.

Urgent letters were sent you September 1 and 2 requesting that you forward lists of teachers. Up to this date no lists have been received from you. Please send immediately as complete a list as you have available, supplementary lists to follow as soon as you get them.

Ethel E. Redfield.

Government Rate Night,  
Official Business,  
Ethel E. Redfield.

Exhibit 17.

WESTERN UNION TELEGRAPH

L. F. Johnson,  
Supt. of City Schools,  
Kimberly, Idaho

Boise, Idaho, Sept. 23, '22.

List of teachers from your district not yet received. Kindly forward as complete a list as you have available as soon as possible (stop) Send supplementary lists when available if all names not now in. Very urgent.

Ethel E. Redfield.

Government Rate Night  
Official Business,  
Ethel E. Redfield

Exhibit 18.

(Acknowledgment, by post card, of teacher's report.)

Boise, Idaho.

Dear Teacher: I wish to acknowledge and thank you for your report on the white pine blister rust control program now being conducted through the



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1. *Chrysomelidae* (Coleoptera) - 100  
 2. *Curculionidae* (Coleoptera) - 100  
 3. *Chrysomelidae* (Coleoptera) - 100

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*[Faint handwritten text at the bottom of the page]*

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1. 1947 - 1949  
2. 1950 - 1951  
3. 1952 - 1953

2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 2681, 26

public schools of the state. Everyone cooperating in this work is rendering a public service which is deeply appreciated and very much worthwhile.

Cordially yours,  
Ethel E. Redfield, State Supt., of  
Public Instruction,  
Collaborator, Bureau of Plant Industry.

Exhibit 19.

(First post card notice requesting teacher who had not reported to report.)

Boise, Idaho.

Dear Teacher:

Up to date no report has been received from you on the white pine blister rust control campaign. If you did not receive the literature sent to you some time ago, please let me know. Otherwise, I would appreciate it very much if you would send in your report as soon as possible.

Cordially yours,  
Ethel E. Redfield, State Supt., of  
Public Instruction,  
Collaborator, Bureau of Plant Industry.

Exhibit 20.

(Second post card notice to teachers who had not made a report.)

Boise, Idaho.

Dear Teacher:

The report requested of you on the white pine blister rust control campaign has not yet been received. I cannot over emphasize the importance of this work and trust that if your pupils have not yet made the survey you will have them do so and send in the report as soon as possible.

Cordially yours,  
Ethel E. Redfield, State Supt. of  
Public Instruction,  
Collaborator, Bureau of Plant Industry.

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UNITED STATES DEPARTMENT OF AGRICULTURE  
Bureau of Plant Industry

## Blister-Rust Control

Boise, Idaho,  
October 30, 1922.Mr. John Doe,  
607 Deacon Avenue,  
Caldwell, Idaho.

Dear Mr. Doe:

I am writing to ask you to use your personal influence to get your teachers to send in to Miss Redfield, State Superintendent of Public Instruction, their reports on the white pine blister rust control campaign. All of your teachers have been supplied with material for this campaign and were urgently requested to report, but up to the present time replies have been received from only 5 teachers.

The importance of this campaign cannot be over emphasized. The schools are the recipient of large sums annually from the sale of government and state timber and to save this timber from destruction is working for the best interests of the schools. Idaho has \$579,000,000 worth of western white pine which must be guarded against the invasion of this destructive blister rust.

The school children and the teachers of Idaho can be of inestimable service to the State and Federal Governments by giving their aid in this campaign. As you can see by the percentage of your teachers reporting, we are not getting the cooperation from the teachers of Idaho that is desired and is imperative if this campaign is to prove a success. The information that is wanted especially is the location of planted black currants and white pine and samples of any diseased specimens of currants or gooseberries. It does not matter whether white pine is native to your locality or not, as the disease will spread rapidly over the country on currants and gooseberries alone, the English black currants being particularly susceptible to the disease and the worst carrier of all the Ribes. Besides the educational value of this campaign, we want to have more concrete and tangible results in the shape of information and specimens, as outlined above. We would like a report from every teacher, regardless of results obtained.

We would appreciate it very much if you could bring this matter to the attention of every teacher in your organization, or to as many as possible either thru the heads of the schools or any manner you may think best. If the teachers have misplaced their report blanks, kindly ask them to send in their report anyway, giving them the specific information wanted, as outlined in the above paragraph. Trusting that we will soon receive a report from each of your teachers who has not yet reported and thanking you for your cooperation,

Very sincerely yours,  
Frank A. Brown, Field Assistant, Bureau of  
Plant Industry,  
c/o Extension Service, Capital Bldg.,  
Boise, Idaho.

CONFIDENTIAL

CONFIDENTIAL

CONFIDENTIAL

CONFIDENTIAL

CONFIDENTIAL

I am writing to you regarding the situation in the state of Texas. The situation is very serious and I am sure that you are aware of this. I am sure that you are aware of the fact that the situation in the state of Texas is very serious and I am sure that you are aware of this. I am sure that you are aware of the fact that the situation in the state of Texas is very serious and I am sure that you are aware of this.

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## 6. Scouting in Montana

### WHITE PINE BLISTER RUST IN MONTANA

By John W. Stephens

#### Blister Rust Work in Montana

The white pine blister rust (*Cronartium ribicola*) is a disease that attacks the five needle pines wherever found. Its alternate host is the *Ribes*, currants and gooseberries.

Previous to 1921 this disease was not known to have obtained a foothold anywhere on the Pacific Coast or the Rocky Mountain region. It was, however, discovered in the summer of 1921 in southwestern British Columbia and northwestern Washington. A conference was held at Portland, Oregon in December 1921 and it was determined to take measures to ascertain how extensively the disease was established and determine methods of combatting or eradicating it wherever it was found to exist.

Accordingly a program, under Federal, State and private funds, was organized for this purpose. This program contained the following points of investigation and control.

1. To determine the present distribution of the disease in the West.
2. To secure the destruction of all diseased or potentially diseased host plants as found.
3. To prevent further spread of the disease through the application of control measures and the enforcement of quarantines.
4. To inform the public concerning the disease and secure their cooperation in controlling it.
5. To conduct the necessary scientific investigations of the disease under western conditions, determine the rapidity with which it may spread in various directions; and determine the location of any possible natural barriers to its progress.

#### Summary of Working Plan

A detailed plan of work was formulated in accordance with the general recommendations of the Portland Conference. The following is a brief summary of the practical working plan as it is being carried forward by the Office of Blister Rust Control and the various cooperating organizations.



### Quarantine Inspection

To be carried on in all of the western states for the purpose of preventing the spread of the disease by shipments of host plants: (1) moving interstate in violation of Federal quarantines; (2) moving interstate in violation of state quarantines.

Federal inspectors will be assigned at terminal and transfer points during the fall and spring shipping seasons and will cooperate closely with state inspectors in enforcing both federal and state quarantines. State inspectors will enforce the quarantine measures within the state and cooperate with the federal inspectors in enforcing the federal quarantines. To avoid duplication, inspectors at several points will act under both state and federal authority. Cooperative plans for enforcing international blister rust quarantine will be worked out with the British Columbia inspection force and every effort will be made to prevent the movement of host plants out of the infected region.

### Scouting for the Disease and Eradication of Dangerous Host Plants

The cultivated English black currant (Ribes nigrum) is recognized as the most susceptible alternate host plant known and since the disease if present in a locality is most readily found on this host a careful inspection of these plants will be made in Washington, Oregon, Idaho, Montana and California.

It is planned to cover the western states as thoroughly as practicable searching for traces of the disease on Ribes and pines. An organized scouting force will be trained and put into the field as early in the spring as the advance of the season permits. These scouts will devote their entire time to looking for the disease and locating the cultivated black currants and white pines.

In regions where it is deemed necessary to eradicate any particular host plants these scouts will assist in finding the plants and reporting them to the state authorities. Where eradication is necessary the work will be done under the authority and direction of the State Department of Agriculture or other state departments having regulatory authority in such matters. The aid of all forestry and agricultural organizations as well as the general public will be solicited and as large a force of auxiliary scouts as it is practicable to train will be developed and directed.

The work as outlined for Montana was planned to locate the disease if it were there. Federal scouts were appointed with instructions to scout the region of Montana in which the white pine occurs and locate cultivated currants and gooseberries paying special attention to the black currants. In all other regions of Montana the regular employees of the State Horticultural Department were to locate the black currants and thus get a state-wide census of their distribution. This work commenced on the 15th of June. Our force of Federal employees consisted of four men. One of these men provided a car for our transportation and we proceeded to cover the territory assigned.



The section of the state in which the white pine is found includes the western part extending from the southern part of Bitter Root Valley and spreading out as you extend north somewhat fan-shaped until it includes all of the western section extending from the eastern boundary of Glacier National Park to the Idaho line. Much of the territory is but sparsely settled. The roads traverse the valleys and throughout these valleys are found the settlers and the infrequent towns. These roads were all traveled, the houses of the settlers and townspeople visited and wherever Ribes were found a record was made of their number and condition.

Besides visiting all of this section a trip was made east of the white pine region which took in all of the larger cities and towns in the western half of Montana. Besides inspecting all cultivated Ribes the wild varieties were also inspected wherever found.

The black currants are comparatively scarce although they are found more or less in all parts where settlements are made. This is especially true of towns. These black currants are not, however, all of the kind commonly known as the English black current, (*Ribes nigrum*). A large proportion of those recorded as black currants are a variety of wild black current which have been planted extensively in some sections for decorative purposes.

This was especially true of the cities of Helena and Great Falls.

Wild Ribes are very abundant in places. The mountains contain them in great numbers and at considerable elevations. They are particularly abundant near the base of ledges, in moist places, and are often found clinging to the rocks where but little soil is found to sustain them. Whenever we search<sup>ed</sup> in the mountains they were found. This was so general that we were led to believe that they were abundant in all parts of the rugged portions of the state. These Ribes, in inaccessible places, are liable to become the agency for the spreading of the disease from the infected areas in Canada. The entire northern boundary is sparsely settled and the presence of black currants is so infrequent in this section that it seems as if they could not be much of a factor in spreading the disease; at the same time, wherever they are located they are a potential source of infection.

#### Suggestions for Work in 1925.

The areas of known infection in Washington and British Columbia should be guarded against the spread of the disease by eradication of all infected trees. These areas and the territory in their immediate neighborhood should be intensively scouted to locate any extensions of the infection or new locations. It would not be a very difficult matter to eradicate the black cultivated currants throughout the white pine region in Montana. That would reduce somewhat the chance of an infection occurring. At the same time with other cultivated Ribes remaining and the abundant wild Ribes throughout the region it would seem to me that the potential danger was ever present even if the black current had been eradicated. It would be an impossibility to eradicate all currants and gooseberries because of their abundance, the inaccessible nature of their location, and the extent of territory over which they are found.





The scouting Montana in 1925 should be confined largely to the portions of the state nearest to the infections that have already been located or of any infection that may be discovered later. That would confine the scouting to the region along the border of Canada for the present. As this is the most inaccessible portion of the state, it would be necessary for the men to enter this region with pack train. The scouting would consist largely of investigating the wild Ribes and such others as are found in traversing the country. You would determine by this work whether or not the disease had spread into Montana territory from the Canadian infected area.

The western part of Montana is a favorable section for the spread of this disease because of the abundance of Ribes and the abundance of the pine that is susceptible. Throughout the region traversed in 1922 the white pine, while not found in pure stands, is found scattered throughout, wherever the moisture is sufficient for its growth.

We were unable to locate the disease in Montana and as far as that was concerned our summer's scouting was without result.

#### Cooperation

The cooperation we received from the State Department of Horticulture was very helpful in relieving us of long trips into comparatively immune territory but at the same time aiding us to make the Ribes census complete.

My associates in the work were at all times industrious and painstaking and the experience they gained should fit them for service another year in perhaps more responsible positions. Our failure to locate the disease in Montana we hope is a sure indication of its not being present.

Respectfully submitted,

John W. Stephen.



# BRIEF SUMMARY OF THE SCHOOL CAMPAIGN IN MONTANA

|   |      |
|---|------|
| I. Number of teachers to whom the school program was sent-----      | 4561 |
| II. Number of reports received from teachers-----                   | 1646 |
| III. Scouting.  |      |
| Number of towns to be scouted-----                                  | 852  |
| Number of towns scouted-----  | 710  |
| IV. Location of white pines.  |      |
| Number reporting white pine either native or planted--              | 132  |
| Number of planted white pine trees located-----                     | 72   |
| Number of specimens of white pine sent in-----                      | 6    |
| V. Location of Ribes other than black currents.                     |      |
| Number reporting Ribes present-----                                 | 519  |
| Number of Ribes specimens other than black currents<br>sent in----- | 104  |
| VI. Location of black currents                                      |      |
| Number reporting black currents present-----                        | 6    |
| Number of black current plants reported-----                        | 848  |
| Number of black current specimens sent in-----                      | 9    |
| VII. Total number of specimens of all kinds sent in-----            | 182  |

THE HISTORY OF THE UNITED STATES

CHAPTER I. THE DISCOVERY OF AMERICA. 1492. CHRISTOPHER COLUMBUS, an Italian, sailed from Spain in search of a western route to the Indies. He discovered the continent of America on October 12, 1492.

CHAPTER II. THE FIRST SETTLEMENTS. 1492-1600. The first permanent European settlement in America was founded by Juan Ponce de Leon in 1513. Other early settlements were established by the Spanish, French, and English.

CHAPTER III. THE STRUGGLE FOR INDEPENDENCE. 1763-1783. The American colonies fought a war of independence against Great Britain, which ended in 1783 with the signing of the Treaty of Paris. The United States was born.

CHAPTER IV. THE EARLY YEARS OF THE REPUBLIC. 1783-1800. The new government, established by the Constitution, faced many challenges in its early years. The Federalist and Democratic-Republican parties emerged.

CHAPTER V. THE WESTERN EXPANSION. 1800-1850. The United States expanded its territory westward, acquiring Louisiana and other lands. The frontier moved further west, and the economy grew rapidly.



## BLISTER RUST SCHOOL CAMPAIGN IN MONTANA - 1922

I. Purpose: The object of the school campaign has been as follows:

- A. Inform the public regarding the blister rust.
- B. Use the teachers and school children as auxiliary scouting force:
  - 1. To look for the disease and send in specimens of anything that resembled it.
  - 2. To report the location of planted black currants.
  - 3. To report the location of planted white pine.

### II. Conferences.

Not until the latter part of August was it decided to carry on a school campaign in Montana. However, at that time it seemed desirable to carry on a school campaign in the western portion of the state which does have considerable white pine. The general idea was discussed on August 19 with Mr. W. L. Shovell, Chief of the Division of Horticulture, State Department of Agriculture. He gave his hearty indorsement of the idea and the procedure shown in Exhibit 1 was agreed upon as the desirable one to follow.

The matter was next taken up with Miss May Trumper, Superintendent of Public Instruction at Helena, Montana. She willingly indorsed the idea (Exhibit 5) and offered to cooperate as far as possible. Since the time was too short to make Miss Trumper a Collaborator of the Bureau of Plant Industry of the U. S. Department of Agriculture so that all correspondence with the teachers could be carried on under her signature, it was agreed that all correspondence with the teachers should be carried on under Mr. Stillinger's name.

Miss Trumper suggested that instead of including only a part of the state, the entire state should be included for the educational value alone if for no other reason. Consequently, it was decided to extend the campaign to the entire state instead of to only the counties listed under Article 9 of Exhibit 1.

The State Superintendent also suggested that the work should be carried on at Helena, Montana since it was more central than Missoula. Further, it was preferable to carry on the work near the offices of the State Department of Education so that closer cooperation could be maintained. However, she stated that there would be no space, equipment or help available for our use since they would be very busy at the time of the school campaign due to the opening of the schools.





The matter was next discussed with Mr. Chester Davis, Director of the State Department of Agriculture. He offered to give us the fullest cooperation possible by providing us with a room in which to carry on the work, a desk, stenographic help, etc. As a result of this offer of cooperation, as well as the recommendation of Miss Trumper, it was decided to carry on the work at Helena.

### III. Summary of Procedure Followed.

1. Campaign was carried on from September 1 to November 10.
2. Mr. W. J. Bach, Agent of the Office of Blister Rust Control, located in quarters provided by the Montana State Department of Agriculture in the Capital Building, Helena, Montana, was in immediate charge of the details of the work, under the general supervision of C. R. Stillinger, of the Office of Blister Rust Control.
3. On August 22, Miss Trumper, State Superintendent of Public Instruction issued a letter to all county superintendents (Exhibit 11) requesting that the county superintendents cooperate by sending in a list of the teachers of that county.
4. In order to familiarize the county superintendents with the proposed school campaign and blister rust as well as to secure their endorsement, a letter (Exhibit 7) together with literature and a sample of the school program was sent to each one on August 26 explaining the proposition and asking for their cooperation by signing an enclosed form letter (Exhibit 6) which could be enclosed with the school programs that were distributed to the teachers in that county.
5. On September 6, a second letter (no copy) was sent to those county superintendents from whom a list had not been received.
6. On September 18, a third letter (Exhibit 12) was sent to those county superintendents from whom a list had not been received.
7. In cases where lists were received the school program as mailed direct to the teacher.
8. In cases where lists were incomplete, as well as in cases where no lists were received, school programs were prepared for the number of teachers listed as employed during last year, and these were mailed to the county superintendents with a letter (Exhibit 13) requesting them to distribute the material as they received the lists of teachers from the different schools. In cases where no list at all had been received from the county superintendent Exhibit 14 was sent to the county superintendent at the time the school programs were sent to them.
9. On October 6, a letter (Exhibit 15) was addressed to all county superintendents to whom unaddressed school programs had been sent for distribution, asking for the names of the teachers to whom they had mailed the material. On October 20, a similar letter (Exhibit 16) was sent. The purpose of these letters was to secure as many of the teachers' names as possible so that the follow-up system might be carried out.

THE ABOVE IS A SUMMARY OF THE INFORMATION RECEIVED FROM THE  
SOURCE OF THE INFORMATION. IT IS NOT A GUARANTEE OF THE  
ACCURACY OF THE INFORMATION. THE SOURCE OF THE INFORMATION  
IS NOT RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION.  
THE SOURCE OF THE INFORMATION IS NOT RESPONSIBLE FOR THE  
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1. SUMMARY OF INFORMATION

1. SUMMARY OF INFORMATION

2. SUMMARY OF INFORMATION

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4. SUMMARY OF INFORMATION

5. SUMMARY OF INFORMATION

6. SUMMARY OF INFORMATION

7. SUMMARY OF INFORMATION

8. SUMMARY OF INFORMATION

9. SUMMARY OF INFORMATION



10. The school program that was forwarded to each teacher consisted of the following:

- 1 Blister Rust Poster.
  - 1 Letter to the teacher, signed by C. R. Stillinger, Exhibit 2.
  - 1 Letter of indorsement from the State Superintendent, Exhibit 5.
  - 1 " " " " " County Superintendent, if an indorsement had been received, Exhibit 6.
  - 1 Letter of indorsement from Mr. W. L. Shovell, Chief of the Division of Horticulture, State Department of Agriculture, Exhibit 4.
  - 1 Bulletin No. 226 to part of the teachers but not all due to the exhaustion of the supply.
- 2 Teacher's report forms, Exhibit 3.

11. In order to check off quickly the replies from teachers, the counties in the state were numbered consecutively. Likewise, the teachers in each county were numbered consecutively. These two numbers with a dash between them were placed upon the left hand corner of the return envelope. Thus, when a reply was received the county and the teacher's name could be quickly checked off. It also made possible the location of reports on which name of the town was illegible. Likewise, reports could be located when the blank outline at the head of the teacher's report was not filled out.

12. If after a reasonable time, generally two weeks after the school programs had been mailed, a follow-up post card was sent as a reminder (Exhibit 9). If still no report was received, a second card was sent (Exhibit 10). No further steps were taken if a report was not received.

13. When replies were received, they were acknowledged by means of a post card (Exhibit 8).

14. All correspondence used under government frank has been under the signature of Mr. C. R. Stillinger.

15. All specimens were examined by Mr. Bach, a trained pathologist.

#### IV. Cooperation.

The State Department of Education has cooperated in every way within their means. Besides providing a great deal of information and advise regarding many points, their chief active cooperation has been in securing lists of teachers as outlined under this subject.

The State Department of Agriculture has given the fullest cooperation. They have provided a room, a desk and tables as well as considerable clerical help. They indorsed the school campaign in a one-page letter, (Exhibit 4) provided the paper and mimeographed 7,500 copies of these for distribution. Also, they have provided the paper, stencils and mimeographed 2,100 copies of indorsements of the school campaign by county superintendents, (Exhibit 6). Without their cooperation it would have been very difficult to carry on the school campaign.





The Forest Service, District 1, located at Missoula, Montana provided paper and mimeographed 7,500 copies of the letter addressed to teachers, Exhibit 2. It was this cooperation that made it possible to get this letter ready for distribution at the time the schools opened.

#### V. Acquisition of Lists of Teachers.

Our inability to secure complete lists of teachers has been the greatest handicap that has been encountered in developing the school campaign. This was due to the fact that the schools started at various periods from September 4 until the middle of October. Further, county superintendents in many cases did not receive these lists complete until the schools had been in progress sometime, and, consequently, it required special effort on their part to complete the lists.

After agreeing to the school program, Miss Trumper, State Superintendent of Public Instruction immediately (August 22) issued a letter to all county superintendents (Exhibit 11) explaining briefly what was proposed to be done, urging their support and requesting that they send in immediately a list of their teachers even though incomplete. However, by September 6 only ten partial lists had been received from the fifty-four counties having schools.

A second letter on September 6 from the State Superintendent (no copy) was sent to the forty-six county superintendents who had not sent in lists. As a result of this letter twenty-nine additional partial lists were secured by September 18.

At this time a third letter (Exhibit 12) was sent out to the remaining fifteen county superintendents, and consequently by September 26 incomplete lists from all counties were received except one. A list from Deer Lodge County never was received.

#### VI. Indorsements by County Superintendents.

In order that the teacher might feel still more the necessity of carrying out the school program, an effort was made to obtain a written indorsement of the school campaign program from each county superintendent. To secure this indorsement a letter (Exhibit 7) explaining the proposed plan was sent to each county superintendent enclosing literature and the school campaign program as well as a blank form for their signature (Exhibit 6). Indorsements were received only from the following counties and a copy enclosed with each set of literature that was sent to each teacher in these respective counties:

|               |          |              |
|---------------|----------|--------------|
| Beaverhead    | Lincoln  | Powder River |
| Cascade       | Madison  | Roosevelt    |
| Daniels       | Mineral  | Stillwater   |
| Flathead      | Missoula | Toole        |
| Golden Valley | Phillips | Valley       |
| Jefferson     |          |              |

$\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$



Indorsements were received from Lewis and Clark and Wilboux Counties, but they arrived too late to be used. Hence signatures of cooperation were received from only eighteen out of the fifty-four counties. Since two of these were received too late to be used, literature was sent forward to thirty-eight counties without any indorsement from the county superintendent.

VII. Blanks Distributed. (Unaddressed programs sent to county superintendents for distribution.)

As may be seen from Table II the lists of teachers which were received were far from complete. In an effort to get the literature to every teacher and to get it out in time to be of use, unaddressed sets of the school program were sent out to the county superintendents. The number of teachers listed in the county for last year was taken as a basis and the difference between this number and the number of teachers on the list that was sent in by the county superintendent was used as the number that was forwarded to the county superintendent asking him to address them to their teachers as they received their names (Exhibit 13.) If no lists had been received for the county, then blanks were sent for all the teachers in the county (Exhibit 14.) 3,709 of these blanks were sent to the county superintendents. Since only 3,737 teachers' names were received, it may be seen that nearly half the literature was distributed through the county superintendents.

Evidently letters (Exhibits 15 and 16) were sent to the county superintendents asking them to send in the names of the teachers to whom they had sent these blanks. Lists of these teachers were desired so that they might be urged to make a report if after due time they had not made one. The names of 7,824 teachers to whom blanks were sent have been received. Consequently, it is known that at least 1,561 teachers received the school program. Possibly many more were distributed by the county superintendents but they have failed to indicate this fact. It is rather doubtful whether the distribution of literature to the teachers through the county superintendent is practicable in a large school program as over an entire state. If only a few counties were the limit, in this case distribution might be accomplished if interviews were held with the county superintendents and their active cooperation secured.

VIII. Distribution of Bulletin No.226.

Due to the exhaustion of Bulletin No.226, it was not included in the literature to some of the teachers so that all they had for information regarding the disease were the facts gleaned from the poster and the circular letters.

The following table indicates the extent by counties of the distribution of circular 226 in the school campaign in Montana, that is, the actual number of teachers who received Bulletin 226. This table in the first column shows the number of teachers whose names have been received, 4,561. The second column shows the number of these, 2,861, that received Bulletin 226. The third column shows the number of blanks that were sent out which received Bulletin 226, but the names of the teachers to whom they were sent have not been received. The fourth column shows the number of replies that had been received up to November 4, 1922. The asterisk indicates the counties in which the indorsement of the county superintendent was enclosed.

... ..



Table 1, SHOWING DISTRIBUTION OF BULLETIN 226

| County          | No. :<br>: Teachers :<br>: Names :<br>: Received : | No. :<br>: Receiv- :<br>: ing :<br>: Bulletin : | Blanks :<br>: sent, :<br>: Distribu- :<br>: tion Un- :<br>: replies | 11-4-22 |
|-----------------|--|---|---|---------|
| Beaverhead      | : 43   | : 45  | : 74  | : 25*   |
| Big Horn        | : 67   | : 0   | : :   | : 23    |
| Blaine          | : 77   | : 0   | : :   | : 19    |
| Broadwater      | : 23   | : 0   | : :   | : 8     |
| Carbon          | : 143  | : 0   | : :   | : 40    |
| Carter          | : 25   | : 25  | : 70  | : 4     |
| Cascade         | : 145  | : 95  | : :   | : 48*   |
| Chouteau        | : 108  | : 108   | : 106   | : 49    |
| Custer          | : 113  | : 0   | : :   | : 32    |
| Danields        | : 37   | : 37  | : 47  | : 7*    |
| Dawson          | : 65   | : 0   | : :   | : 33    |
| Deer Lodge      | : 0  | : 0   | : :   | : 1     |
| Fallon          | : 64   | : 64  | : 25  | : 10    |
| Fergus          | : 207  | : 153   | : :   | : 51    |
| Flethead        | : 198  | : 198   | : 19  | : 49*   |
| Gallatin        | : 163  | : 163   | : 43  | : 30    |
| Garfield        | : 68   | : 68  | : 57  | : 12    |
| Glacier         | : 15   | : 0   | : :   | : 4     |
| Golden Valley   | : 47   | : 47  | : 18  | : 10    |
| Greente         | : 41   | : 41  | : 15  | : 15    |
| Hill            | : 130  | : 0   | : :   | : 27    |
| Jefferson       | : 56   | : 56  | : 17  | : 18*   |
| Judith Basin    | : 77   | : 77  | : 9   | : 28    |
| Lewis and Clark | : 150  | : 0   | : :   | : 43    |
| Liberty         | : 37   | : 37  | : 51  | : 15    |
| Lincoln         | : 83   | : 83  | : 17  | : 21*   |
| Madison         | : 91   | : 91  | : 22  | : 28*   |

| County       | No. :<br>: Teachers :<br>: Names :<br>: Received : | No. :<br>: Receiv- :<br>: ing :<br>: Bulletin : | Blanks :<br>: sent, :<br>: Distribu- :<br>: tion Un- :<br>: replies | 11-4-22 |
|--------------|--|---|---|---------|
| McCone       | : 54   | : 0   | : :   | : 25    |
| Meagher      | : 55   | : 0   | : :   | : 21    |
| Mineral      | : 30   | : 30  | : 5   | : 12*   |
| Missoula     | : 164  | : 164   | : 55  | : 29*   |
| Musselshell  | : 121  | : 0   | : :   | : 9     |
| Park         | : 96   | : 50  | : :   | : 34    |
| Phillips     | : 114  | : 114   | : 6   | : 28*   |
| Pondera      | : 72   | : 64  | : :   | : 21    |
| Powder River | : 38   | : 0   | : :   | : 9*    |
| Powell       | : 25   | : 0   | : :   | : 16    |
| Prairie      | : 39   | : 39  | : 44  | : 14    |
| Ravalli      | : 91   | : 91  | : :   | : 22    |
| Richland     | : 108  | : 108   | : 92  | : 6     |
| Roosevelt    | : 74   | : 74  | : 43  | : 20*   |
| Rosebud      | : 85   | : 0   | : :   | : 25    |
| Sanders      | : 75   | : 0   | : :   | : 23    |
| Sheridan     | : 101  | : 0   | : :   | : 40    |
| Silver Bow   | : 271  | : 271   | : :   | : 14    |
| Stillwater   | : 96   | : 96  | : 42  | : 40*   |
| Sweet Grass  | : 64   | : 64  | : 22  | : 22    |
| Teton        | : 81   | : 69  | : :   | : 25    |
| Toole        | : 33   | : 33  | : 76  | : 19*   |
| Tyler        | : 26   | : 23  | : :   | : 8     |
| Valley       | : 119  | : 75  | : :   | : 30*   |
| Wheatland    | : 56   | : 0   | : :   | : 20    |
| Wibaux       | : 53   | : 0   | : :   | : 16    |
| Yellowstone  | : 147  | : 63  | : :   | : 40    |
| Total        | : 4561   | : 2812  | : 975   | : 1234  |

\* Indorsements of county superintendent sent.





TABLE 11 - BOYTA A SCHOOL, CARRIAGE DATA BY COUNTY - FALL 1922.

| COUNTY          | Number of Teachers Listed Last Year | Number of Teachers' Names Received | Number of Pupils June 1, 1922 | Receipt of Lists of Teachers  |                                    |                        |             |      |                    |                                     |                                   |                                |                                      | Nature of Replies |                                |          |                    |                                       |                                     |                                  |   |                                       |                                    |                        |                               |                          |                            |                      |   |         |        |               |                 |                |           |                |                                  |                                |       |                |            |              |
|-----------------|-------------------------------------|------------------------------------|-------------------------------|-------------------------------|------------------------------------|------------------------|-------------|------|--------------------|-------------------------------------|-----------------------------------|--------------------------------|--------------------------------------|-------------------|--------------------------------|----------|--------------------|---------------------------------------|-------------------------------------|----------------------------------|---|---------------------------------------|------------------------------------|------------------------|-------------------------------|--------------------------|----------------------------|----------------------|---|---------|--------|---------------|-----------------|----------------|-----------|----------------|----------------------------------|--------------------------------|-------|----------------|------------|--------------|
|                 |                                     |                                    |                               | Indorsements (Exhibit 6) Sent | Not Sent by County Superintendents | Addressed Bulletin 226 | Blanks Sent | Date | Number of Teachers | Date First Letter (Exhibit 11) Sent | Date Second Letter (no copy) Sent | Date Third Letter (Ex-12) Sent | No. of Personal Letters Sent to Date | Date              | Blanks Sent                    |          | Number of Teachers | Total No. of Teachers' Names Received | Replies Received to Date from First | No. of First Notices (Ex-9) Sent | Replies Received to Date from Second Notice | Number of Second Notices (Ex-10) Sent | No. of Replies Since Second Notice | Total November 4, 1922 | Additional to End of Campaign | Grand Total Jan. 1, 1923 | No. of Towns to be Scouted | No. of Towns Scouted | Number Reporting Blister Rust not Present | Present | Absent | General       |                 |                | Specimens |                |                                  |                                |       |                |            |              |
|                 |                                     |                                    |                               |                               |                                    |                        |             |      |                    |                                     |                                   |                                |                                      |                   | Letter (Ex-15) Requesting List | Received |                    |                                       |                                     |                                  |   |                                       |                                    |                        |                               |                          |                            |                      |   |         |        | White to Fine | Ribbons Present | Black Currents | General   | Black Currents | No. of White Pine Trees Reported | No. of Black Currents Reported | Ribes | Black Currents | White Pine | Other Plants |
| Beaverhead      | 117                                 | 31                                 | 1549                          | 31                            | 06                                 | 9-9                    | 31          | 6-22 | 9-6                | 0                                   | 9-11                              | 86                             | 10-6                                 | 0                 | 10-10                          | 12       | 43                 | 1                                     | 42                                  | 10                               | 32  | 14                                    | 25                                 | 1                      | 26                            | 18                       | 14                         | 20                   | 2   | 7       | 7      | 5             | 1               | 3              | 1         | 3              | 1                                | 4                              |       |                |            |              |
| Bir Horn        | 78                                  | 67                                 | 1071                          | 1                             | 0                                  | 9-13                   | 67          | "    | "                  | 0                                   | 9-15                              | 11                             | "                                    | 0                 | "                              | "        | 67                 | 0                                     | 67                                  | 9                                | 58  | 14                                    | 23                                 | 0                      | 23                            | 15                       | 9                          | 22                   | 1   | 11      | 7      | 3             | 1               | 1              | 1         | 1              | 1                                | 1                              |       |                |            |              |
| Blaine          | 169                                 | 77                                 | 1980                          | 1                             | 0                                  | 9-15                   | 77          | "    | "                  | 0                                   | 9-16                              | 92                             | "                                    | 0                 | "                              | "        | 77                 | 0                                     | 77                                  | 7                                | 70  | 12                                    | 19                                 | 4                      | 23                            | 18                       | 13                         | 21                   | 0   | 15      | 4      | 8             | 1               | 1              | 1         | 1              | 1                                | 1                              | 1     |                |            |              |
| Broadwater      | 53                                  | 23                                 | 670                           | 1                             | 0                                  | 9-18                   | 23          | "    | "                  | 0                                   | 9-18                              | 30                             | "                                    | 0                 | 10-28                          | "        | 23                 | 1                                     | 22                                  | 4                                | 10  | 3                                     | 10                                 | 2                      | 10                            | 0                        | 8                          | 9                    | 3   | 2       | 1      | 3             | 1               | 1              | 1         | 1              | 1                                | 1                              | 1     |                |            |              |
| Carbon          | 174                                 | 143                                | 4449                          | 1                             | 0                                  | 9-22                   | 143         | "    | "                  | 0                                   | 9-22                              | 31                             | "                                    | 0                 | "                              | "        | 143                | 0                                     | 143                                 | 21                               | 122   | 19                                    | 40                                 | 12                     | 52                            | 21                       | 17                         | 41                   | 5   | 22      | 10     | 7             | 1               | 1              | 1         | 1              | 1                                | 1                              | 1     |                |            |              |
| Carter          | 95                                  | 25                                 | 952                           | 1                             | 0                                  | 9-9                    | 25          | "    | "                  | 0                                   | 9-12                              | 70                             | "                                    | 0                 | "                              | "        | 25                 | 0                                     | 25                                  | 2                                | 23  | 2                                     | 4                                  | 5                      | 9                             | 9                        | 1                          | 7                    | 1   | 2       | 1      | 1             | 1               | 1              | 1         | 1              | 1                                | 1                              | 1     |                |            |              |
| Cassida         | 426                                 | 93                                 | 8429                          | 1                             | 0                                  | 9-12                   | 93          | "    | "                  | 0                                   | 9-14                              | 333                            | "                                    | 0                 | 10-16                          | 52       | 145                | 7                                     | 138                                 | 25                               | 113   | 16                                    | 48                                 | 7                      | 55                            | 27                       | 26                         | 53                   | 5   | 28      | 20     | 10            | 5               | 84             | 2         | 1              | 1                                | 1                              | 1     | 1              |            |              |
| Chouteau        | 214                                 | 108                                | 2063                          | 1                             | 0                                  | 106                    | 9-11        | 108  | "                  | 0                                   | 1-9-13                            | 106                            | "                                    | 0                 | 10-28                          | "        | 100                | 2                                     | 106                                 | 34                               | 72  | 12                                    | 49                                 | 7                      | 56                            | 22                       | 21                         | 54                   | 0   | 44      | 21     | 14            | 6               | 1              | 1         | 1              | 1                                | 1                              | 1     |                |            |              |
| Custer          | 151                                 | 113                                | 2496                          | 1                             | 0                                  | 9-22                   | 113         | "    | "                  | 0                                   | 9-22                              | 10                             | "                                    | 0                 | "                              | "        | 113                | 0                                     | 113                                 | 20                               | 93  | 12                                    | 32                                 | 5                      | 37                            | 20                       | 16                         | 31                   | 3   | 15      | 10     | 6             | 1               | 1              | 1         | 1              | 1                                | 1                              | 1     | 1              |            |              |
| Daniels         | 84                                  | 37                                 | 1175                          | 1                             | 0                                  | 47                     | 9-2         | 37   | "                  | 0                                   | 9-7                               | 47                             | "                                    | 0                 | "                              | "        | 37                 | 1                                     | 36                                  | 2                                | 34  | 4                                     | 7                                  | 1                      | 0                             | 3                        | 4                          | 8                    | 1   | 7       | 4      | 2             | 1               | 1              | 1         | 1              | 1                                | 1                              | 1     | 1              |            |              |
| Dawson          | 145                                 | 59                                 | 2207                          | 1                             | 0                                  | 9-22                   | 59          | "    | 19-6               | 9-18                                | 1-9-23                            | 06                             | "                                    | 0                 | 10-16                          | 6        | 65                 | 0                                     | 65                                  | 17                               | 48  | 16                                    | 33                                 | 0                      | 41                            | 19                       | 14                         | 38                   | 1   | 23      | 9      | 8             | 3               | 1              | 47        | 2              | 1                                | 1                              | 1     | 1              |            |              |
| Deerlawn        | 90                                  | 0                                  | 2022                          | 1                             | 0                                  | 10                     | 10          | "    | "                  | "                                   | 9-27                              | 90                             | "                                    | 0                 | 10-28                          | "        | 0                  | 0                                     | 0                                   | 0                                | 0   | 1                                     | 1                                  | 0                      | 1                             | 1                        | 1                          | 1                    | 1   | 1       | 1      | 1             | 1               | 1              | 1         | 1              | 1                                | 1                              | 1     | 1              | 1          |              |
| Fallon          | 89                                  | 64                                 | 1236                          | 1                             | 0                                  | 25                     | 9-11        | 64   | "                  | "                                   | 9-13                              | 25                             | "                                    | 0                 | "                              | "        | 64                 | 1                                     | 63                                  | 5                                | 58  | 5                                     | 11                                 | 3                      | 14                            | 12                       | 9                          | 13                   | 1   | 10      | 4      | 1             | 1               | 106            | 1         | 1              | 1                                | 1                              | 1     | 1              |            |              |
| Fergus          | 485                                 | 153                                | 6420                          | 1                             | 0                                  | 9-9                    | 153         | "    | "                  | 0                                   | 1                                 | 333                            | "                                    | 0                 | 10-12                          | 54       | 207                | 2                                     | 205                                 | 23                               | 104   | 20                                    | 51                                 | 24                     | 75                            | 39                       | 31                         | 65                   | 5   | 36      | 22     | 11            | 4               | 1              | 8         | 6              | 2                                | 1                              | 1     | 1              | 1          |              |
| Flintford       | 217                                 | 104                                | 5329                          | 1                             | 0                                  | 33                     | 9-4         | 104  | "                  | 0                                   | 1-9-18                            | 33                             | "                                    | 0                 | 10-11                          | 14       | 190                | 9                                     | 109                                 | 23                               | 166   | 17                                    | 49                                 | 24                     | 73                            | 25                       | 23                         | 66                   | 7   | 22      | 24     | 2             | 4               | 170            | 6         | 1              | 1                                | 1                              | 1     | 1              |            |              |
| Gallatin        | 206                                 | 64                                 | 3024                          | 1                             | 0                                  | 64                     | 142         | 9-11 | 64                 | "                                   | 19-6                              | 0                              | 1-9-13                               | 142               | "                              | 0        | 10-23              | 99                                    | 163                                 | 3                                | 160   | 15                                    | 147                                | 14                     | 50                            | 5                        | 35                         | 15                   | 12  | 31      | 4      | 8             | 12              | 2              | 4         | 3              | 1                                | 1                              | 1     | 1              | 1          |              |
| Garfield        | 125                                 | 46                                 | 1121                          | 1                             | 0                                  | 46                     | 79          | 9-18 | 46                 | "                                   | "                                 | 0                              | 1-9-12                               | 79                | "                              | 0        | 10-18              | 22                                    | 60                                  | 0                                | 60  | 3                                     | 65                                 | 9                      | 12                            | 10                       | 22                         | 20                   | 15  | 20      | 1      | 13            | 5               | 7              | 1         | 1              | 1                                | 1                              | 1     | 1              | 1          |              |
| Glasier         | 50                                  | 16                                 | 803                           | 1                             | 0                                  | 19-28                  | 16          | "    | "                  | 9-18                                | 0                                 | 9-27                           | 35                                   | "                 | 0                              | "        | 16                 | 0                                     | 15                                  | 2                                | 13  | 2                                     | 4                                  | 1                      | 5                             | 6                        | 5                          | 4                    | 1   | 5       | 2      | 3             | 1               | 1              | 1         | 1              | 1                                | 1                              | 1     | 1              |            |              |
| Golden Valley   | 65                                  | 33                                 | 916                           | 1                             | 0                                  | 33                     | 32          | 9-9  | 33                 | "                                   | "                                 | 0                              | 2-9-12                               | 32                | "                              | 0        | 10-11              | 14                                    | 47                                  | 0                                | 47  | 6                                     | 41                                 | 4                      | 10                            | 9                        | 19                         | 13                   | 10  | 16      | 3      | 12            | 9               | 5              | 2         | 1              | 1                                | 1                              | 1     | 1              | 1          |              |
| Granite         | 56                                  | 37                                 | 910                           | 1                             | 0                                  | 37                     | 19          | 9-11 | 37                 | "                                   | "                                 | 0                              | 9-12                                 | 19                | "                              | 0        | 10-16              | 4                                     | 41                                  | 1                                | 40  | 9                                     | 30                                 | 3                      | 18                            | 0                        | 13                         | 6                    | 3   | 7       | 2      | 4             | 1               | 1              | 1         | 1              | 1                                | 1                              | 1     | 1              | 1          |              |
| Hill            | 220                                 | 130                                | 2668                          | 1                             | 0                                  | 9-26                   | 130         | "    | "                  | 9-10                                | 1-9-26                            | 90                             | "                                    | 0                 | 10-23                          | 0        | 130                | 0                                     | 130                                 | 14                               | 116   | 13                                    | 27                                 | 21                     | 48                            | 21                       | 21                         | 47                   | 1   | 40      | 15     | 20            | 4               | 1              | 1         | 1              | 1                                | 1                              | 1     | 1              | 1          |              |
| Jefferson       | 73                                  | 32                                 | 1137                          | 1                             | 0                                  | 41                     | 9-11        | 32   | "                  | "                                   | 9-12                              | 41                             | "                                    | 0                 | 10-16                          | 24       | 56                 | 4                                     | 52                                  | 3                                | 49  | 11                                    | 18                                 | 3                      | 21                            | 16                       | 16                         | 16                   | 7   | 4       | 10     | 2             | 1               | 1              | 1         | 1              | 1                                | 1                              | 1     | 1              |            |              |
| Judith Basin    | 86                                  | 74                                 | 1909                          | 1                             | 0                                  | 74                     | 12          | 9-22 | 74                 | "                                   | 19-18                             | 2                              | 9-23                                 | 12                | "                              | 0        | 10-13              | 3                                     | 77                                  | 0                                | 77  | 16                                    | 62                                 | 13                     | 28                            | 6                        | 34                         | 20                   | 16  | 31      | 3      | 23            | 10              | 7              | 6         | 1              | 12                               | 1                              | 1     | 1              | 1          | 1            |
| Lewia and Clark | 168                                 | 150                                | 3179                          | 1                             | 0                                  | 9-10                   | 150         | "    | "                  | 9-19                                | 10                                | "                              | 0                                    | "                 | "                              | 160      | 1                  | 149                                   | 10                                  | 131                              | 24  | 43                                    | 0                                  | 43                     | 16                            | 14                       | 35                         | 7                    | 5   | 14      | 1      | 1             | 1               | 2              | 6         | 1              | 1                                | 1                              | 1     | 1              | 1          |              |
| Liberty         | 80                                  | 37                                 | 636                           | 1                             | 0                                  | 37                     | 61          | 9-25 | 37                 | "                                   | 9-10                              | 9-25                           | 51                                   | "                 | 0                              | 10-28    | "                  | 37                                    | 0                                   | 37                               | 7   | 30                                    | 0                                  | 15                     | 2                             | 17                       | 11                         | 6                    | 17  | 1       | 11     | 1             | 1               | 1              | 1         | 1              | 1                                | 1                              | 1     | 1              | 1          |              |
| Lincoln         | 100                                 | 26                                 | 1651                          | 1                             | 0                                  | 26                     | 74          | 9-2  | 26                 | "                                   | 9-7                               | 74                             | "                                    | 0                 | 10-16                          | 57       | 03                 | 4                                     | 79                                  | 1                                | 78  | 16                                    | 21                                 | 10                     | 31                            | 14                       | 14                         | 24                   | 5   | 7       | 7      | 3             | 1               | 1              | 1         | 1              | 1                                | 1                              | 1     | 1              | 1          |              |
| Madison         | 113                                 | 56                                 | 1626                          | 1                             | 0                                  |                        |             |      |                    |                                     |                                   |                                |                                      |                   |                                |          |                    |                                       |                                     |                                  |   |                                       |                                    |                        |                               |                          |                            |                      |   |         |        |               |                 |                |           |                |                                  |                                |       |                |            |              |





## XI. Getting in Reports.

Replies or reports from teachers in all cases have been acknowledged. Exhibit 8 gives the form statements sent in response to reports that were received.

In the cases of teachers who were slow in sending in replies after they had received the literature, a post card was sent (Exhibit 9) reminding them of the fact that they had not reported. After due time if no report had been received a second post card reminder (Exhibit 10) was sent. If no response was received as a result of these two reminders no further efforts were made to get a report. 4471 first notices were sent out and 3930 second notices.

### X. Summary of School Campaign. (See table)

|  |         |
|--|---------|
| 1. Number of counties-----   | 55      |
| 2. Total number of students July 1, 1922-----  | 122,167 |
| 3. Total number of teachers last year-----   | 7,446   |
| 4. Total number of teachers' names received-----   | 4,561   |
| 5. Total number of school programs sent direct to teacher---   | 3,737   |
| 6. Total number of school programs sent to county superin-<br>tendents for distribution-----   | 3,709   |
| 7. Total number of school programs (blanks) sent to county<br>superintendents but lists not received of teachers to whom<br>they were distributed----- | 2,865   |
| 8. Total number of school programs (blanks) sent to county<br>superintendents and lists received of the teachers to<br>whom they were sent-----        | 824     |
| 9. Number of county superintendents sending indorsements-----  | 16      |
| 10. Number of school programs distributed with the county<br>superintendent's indorsement enclosed-----  | 2,162   |
| 11. Distribution of Bulletin 226:  |         |
| A. Number of school programs addressed to teachers-----  | 2,351   |
| B. Number of school programs addressed to teachers with-<br>out bulletin 226-----  | 1,366   |
| C. Total school programs addressed to teachers-----  | 3,737   |
| D. Number in blanks sent to county superintendents-----  | 1,430   |





|     |   |        |
|-----|---|--------|
| E.  | Number of blanks sent to county superintendents<br>without bulletins----- | 2,279  |
| F.  | Total number of blanks sent-----  | 3,709  |
| G.  | Total number of school programs containing<br>Bulletin 226-----           | 3,781  |
| H.  | Total number of school programs not containing<br>Bulletin 226-----       | 3,665  |
| I.  | Total number of school programs distributed-----                          | 7,446  |
| 12. | Requests for lists of teachers from county superintendents.               |        |
|     | Number of first letters (Exhibit 11) requesting lists----                 | 54     |
|     | " " second " (no copy) " "  | 45     |
|     | " " third " (Exhibit 12) " "  | 15     |
| 13. | Literature Distributed.   |        |
|     | Posters-----  | 7,446  |
|     | Letters to teachers (Exhibit 2)-----                                      | 7,446  |
|     | Letters of the State Department of Agriculture<br>(Exhibit 4)-----        | 7,446  |
|     | Envelopes 8 x 10-1/2" with return address-----                            | 7,446  |
|     | Teachers' report forms (Exhibit 3)-----                                   | 14,962 |
|     | County superintendents' indorsements (Exhibit 6)-----                     | 2,162  |
|     | Bulletins 226-----  | 3,781  |
|     | Number of State Superintendent's indorsements<br>(Exhibit 5)-----         | 7,446  |
|     | Post cards sent first time requesting reports<br>(Exhibit 9)-----         | 4,471  |
|     | Post cards sent second time requesting reports<br>(Exhibit 10)-----       | 3,930  |
|     | Number of acknowledgments by post card (Exhibit 8)----                    | 1,235  |
|     | Total number of post cards sent out-----                                  | 9,636  |
| 14. | Results.  |        |
|     | A. Educational.   |        |



|  |         |
|--|---------|
| Number of teachers informed regarding blister rust---- | 7,446   |
| " " students " " " "                                   | 122,000 |
| " " parents instructed by students-----                | 81,233  |

B. Scouting for blister rust.

|   |       |
|---|-------|
| Number of reports of scouting for blister rust-----             | 1,646 |
| Number of individual communities scouted one or more times----- | 710   |

C. Location of white pine.

|  |     |
|--|-----|
| Number stating that white pines are present----- | 132 |
| " " " " " " not present-----                     | 811 |
| " of white pine trees reported-----              | 72  |

D. Location of black currants

|  |     |
|--|-----|
| Number stating that black currants were present----- | 6   |
| " " " " " " not present-----                         | 103 |
| " of black currants reported-----                    | 848 |

E. Presence or absence of Ribes in general, cultivated or wild.

|                                     |     |
|-------------------------------------|-----|
| Number reporting Ribes present----- | 519 |
| " " " absent-----                   | 334 |

F. Specimens received.

|   |     |
|---|-----|
| Number of reports containing specimens-----             | 182 |
| Nature of specimens sent in.                            |     |
| a. Reports containing Ribes other than black currants-- | 104 |
| b. " " black currant specimens-----                     | 9   |
| c. " " white pine specimens-----                        | 6   |
| d. " " other plant specimens-----                       | 63  |

One specimen of particular importance was sent in. This was a specimen of Cronartium occidentale on Ribes aureum from Calabar, Montana. The stage of this rust on the currant resembles very much the blister rust. This rust attacks the pinon pines,







but not the white pines. It was not known before that this rust occurred in Montana.

#### G. Discussion of results.

About 85 per cent of the reports that were received were made on the forms sent to the teachers for that purpose. The other reports that were written in the form of a letter as a rule were very unsatisfactory as far as specific information was concerned. The use of a regular form in work of this kind is emphasized by the results obtained in this campaign.

In counties where the indorsement of the county superintendent was obtained and inclosed in the programs sent to the teachers, 29.7 per cent of the teachers reported. In the other counties in which the indorsement was not inclosed 34.7 per cent of the teachers reported. The indorsement by the county superintendent evidently has some influence in obtaining reports from the teachers of that county.

There were 852 individual towns within or in the vicinity of which one or more teachers were located. All teachers of these communities were sent the school program. Although each teacher in each town did not make a report, reports that the community had been scouted for blister rust were received from one or more teachers from 710 communities or 83.3 per cent.

Although the percentage of communities scouted is satisfactory, yet the percentage of teachers reporting is low. 4,561 teachers' names were received, but reports were received from only 1,646 or a percentage of 36 reporting. This percentage is low for the following reasons:

1. Due to our inability to get the exact dates when the schools started, many of the programs were finally returned.
2. In some cases the school programs were received too late in the season for it to be carried out and consequently the teacher made no report upon the matter. This was due to the impossibility of getting in the teachers' names on time.
3. Upon receiving the post card notices, many teachers reported that they had never received the literature. It was then too late to send these teachers the school program although in each case they were forwarded literature as evidently for some reason the mail had gone astray.
4. In a great many cases the superintendent of the schools requested his teachers to report to him. He then reported for his entire teaching staff. As a rule he made no statement of the names or number of teachers he was reporting for or even of the fact that he was superintendent of the schools. The principals of high schools in many cases did likewise.

5. Many teachers carried out the campaign, but because the results were negative, or the pupils did not bring in any material which in their judgment resembled the disease, did not make a report. Several so stated in reply to the second post card notice.





6. Because of the nature of the subject in many schools the matter was naturally considered as one that should be carried out by the Botany and Agricultural classes. Consequently the remainder of the teachers who did not teach either of these subjects did not carry out the program and did not make a report.

7. In the prairie counties the reports were the lowest. What few reports were received often stated that since they lived in a treeless prairie, they did not consider it necessary to carry out the campaign. Apparently this was the judgment of many of the teachers in the prairie counties and accounts for the small percentage reporting.

XI. Owners of black currants in Montana as shown by specimens of the leaves from the plants sent in by school children.

J. V. Straw, Forsyth, Rosebud County, Montana.

L. J. Wakefield, Forsyth, Rosebud County, Montana.

Mrs. Joseph Paul, Lewiston, Fergus County, Montana.

William Hofferment 372 Seventh Avenue, N.E., Kalispell, Flathead Co., Montana.

Mr. Archie Brownlee, Lewiston, Fergus County, Montana.

William Robinson, Belmont, Golden Valley County, Montana.

Mr. T. H. McCauley, Boulder, Jefferson County, Montana.

Eleanor Smith, Stark, Missoula County, Montana.

William Karsten, Union, Dawson County, Montana

XII. Methods used in the schools in carrying out the school program.

1. Grade teachers after discussing the disease required their pupils to write an essay on the disease before going out to look for it.

2. After the pupils had looked for the disease grade teachers had the pupils write their report as a letter to the U. S. Department of Agriculture, as an exercise in business letter writing.

3. Art teachers required their pupils to collect the leaves of currants and gooseberries and mount them as a lesson in art.

4. In Botany classes a period was taken to discuss the disease. Then a laboratory period was taken to learn currants, gooseberries and white pines from other plants.

5. In the Agricultural, General Science and Nature Study classes, blister rust was used to stress the importance of disease to plant culture.

6. The teachers made field trips both alone and with their students looking for currants, gooseberries and white pines as well as inspecting for blister rust. Thus the students were instructed in field observation and nature study.

7. In high schools the subject was presented in general assembly as an address in science and economics. The students were then requested to look for it.

The Commission on the Status of Women, established in 1946, was the first of its kind. It was created by the Economic and Social Council of the United Nations to promote gender equality and to coordinate the work of the various organizations concerned with the status of women.

The Commission has since held numerous sessions, each with a specific theme. It has produced a wealth of reports and recommendations, which have been adopted by the United Nations and other international organizations. Its work has been instrumental in the development of international law and policy on women's rights.

### The Commission on the Status of Women and the United Nations

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8. Often the posters were placed permanently in conspicuous places, such as depots, post offices, and public bulletin boards.

9. Teachers showed the literature to lumbermen, foresters and others whom they knew were in the woods part of their time, asking them whether they had ever seen anything that resembled the pictures or whether there were white pine present.

XIII. Reports received from teachers in the Blister Rust Survey.

The following letters are typical of the reports that have been received from teachers. They illustrate the spirit of cooperation that has prevailed among the teachers in carrying out the work and show their interest in work of this nature.

Report by Teacher on Student Inspection for White Pine Blister Rust.

Polson, Flathead County, Montana,  
Spring Valley School, District No.57,  
November 1, 1922.

No white pine anywhere in the country. Children have taken trips in the hills to find white pine. Instruction was given concerning the appearance and growth of white pine trees. I made it my business to look for them. There are very few currants or gooseberries here, none are diseased.

These school children were enthusiastic about this survey for diseased trees and worked faithfully.

While our report is very late, still we felt the importance of this work and have tried to carry it out.

There are no English black currants here.

Grade 1-8  
No. of pupils 11.

(s) Phyllis May,  
Polson, Montana.

Stanford, Montana,  
October 11, 1922.

My dear Mr. Stillinger:

Please do not think I have been wilfully neglectful of your plea for forest preservation. I talked to the pupils of the school about the matter and showed them the pictures you sent. We are all in sympathy with all such movements, but Stanford is not near any trees of any kind much to our regret, and the Judith Hills about twenty miles away are our nearest forest trees. We could not possibly comply with the request as to observation.

Sincerely yours,

(s) (Mrs.) A. M. Cary



THE UNIVERSITY OF CHICAGO  
DEPARTMENT OF CHEMISTRY

REPORT OF THE  
COMMISSIONERS OF THE  
BOARD OF TRUSTEES  
FOR THE YEAR 1900

# ANNUAL REPORT

THE UNIVERSITY OF CHICAGO  
DEPARTMENT OF CHEMISTRY  
FOR THE YEAR 1900

## REPORT OF THE COMMISSIONERS OF THE BOARD OF TRUSTEES

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Lodge Grass, Montana,  
October 10, 1922.

We gave a class period in Agriculture to the study of the White Pine Blister Rust disease. On investigating, my pupils reported finding none of the disease on the current or gooseberry bushes which they examined. We have the yellow pine in this locality.

Very truly,  
(s) (Mrs.) C. P. Willmore.

Merino, Montana,  
October 12, 1922.

C. R. Stillinger,  
Helena, Montana.

Dear Sir:

The children have canvassed the district for the Pine Leaf Blister and have found none on either the gooseberries or currants. The children, mostly boys had a strong interest in the search so I am quite sure there is no Pine Leaf Blister here. There are no evergreen trees in this district and the patches of bushes are mostly cultivated ones, far between, so there is little danger of spreading.

If there should be found anything like the Pine Leaf Blister Rust, I shall not fail to send it to you.

Yours truly,  
(s) Lydia Trask.

EUREKA PUBLIC SCHOOLS  
Eureka, Montana

October 18, 1922.

Mr. C. R. Stillinger,  
Helena, Montana.

Dear Mr. Stillinger:

We are anxious to cooperate with you in every possible way in the matter of discovering the White Pine Blister Rust. I took the matter up with all of the grade teachers, and they have instructed the children to search for it or anything that resembles it.

In the eight grade agriculture class I used the illustrative material sent us and asked all of the boys and girls to watch for the Blister

1944-1945

1. The first part of the report deals with the general situation of the country and the progress of the war.

2. The second part deals with the economic situation and the progress of the war.

3. The third part deals with the political situation and the progress of the war.

4. The fourth part deals with the military situation and the progress of the war.

5. The fifth part deals with the cultural situation and the progress of the war.

6. The sixth part deals with the social situation and the progress of the war.

7. The seventh part deals with the international situation and the progress of the war.

8. The eighth part deals with the conclusion of the report.

9. The ninth part deals with the appendix.

10. The tenth part deals with the bibliography.

11. The eleventh part deals with the index.

12. The twelfth part deals with the list of figures.

13. The thirteenth part deals with the list of tables.

14. The fourteenth part deals with the list of references.



Rust, but they were unable to find it.

When the above did not bring any results I decided to take the agriculture class out and look for it. We made two field trips, and visited several gardens but without results.

So if there is any of the rust in this vicinity it has escaped us, for we have really made diligent search without results.

Please feel free to call upon us if there is anything further we can do in this matter.

Cordially yours,  
(s) Earle Price.

Stevensville, Montana.

I would like to suggest that if you want results on this you should concentrate on science teachers and get them to make science assignments of the work. A teacher of foreign languages can hardly do that. I did however post the placard and make the announcement, but the children have not brought in any material to send in.

Yours truly,  
(s) Alice Hanke.

White Sulphur Springs, Montana,  
October 19, 1922.

This work was taken up by the manual training classes throughout the High School. A thorough canvass of the community was made and one field trip into the woods was taken, covering two days. None of the White Pine Blister Rust was found on pines or currants or gooseberries.

(s) T. A. Bruner

Haugen, Montana,  
October 10, 1922.

Mr. C. R. Stillinger,  
Helena, Montana.

Dear Sir:

This is in answer to your card which requested my report on the White Pine Blister Rust Survey.





As suggested by your department and advocated by our county and state superintendents, the children were instructed in regard to the nature of the disease, its appearance, methods of spreading and its danger. Even yet, the pictures you sent us are on the bulletin board at school.

However, we were informed by the officers at the Savenac Forest Station here, that a through survey was made here this summer so nothing more could be done. Although the children were eager to do what they could.

Very truly yours,  
(s) Eleanor Buchter.

Lovejoy, Montana

C. R. Stillinger:  
Helena, Montana.

Dear Sir:

The pupils of my school are all too small to give a report, as they walk to school and come only a short distance. This district has no pines but a great many currants and gooseberries grow in the coulees. I have been in all the patches and can find none that appear diseased. They grow in such thick bunches that I am unable to give you the number of the plants. We are the only people in this district with tame currants or gooseberries and they are not affected by this disease.

I am sorry to have caused you so much inconvenience.

Yours respectfully,  
(s) Dorothea Simser.

Lima, Montana,  
October 10, 1922.

Mr. C. R. Stillinger,  
State Department of Agriculture,  
Helena, Montana.

Dear Sir:

I have interested the pupils of my school in behalf of the White Pine Blister Rust, also have consulted members of the school board and citizens in this community.

This disease is not known in this part of the state, or at least in this community.

I heartily indorse this plan in assisting to protect the vast white and sugar pine stands of the western states.

THE UNITED STATES OF AMERICA  
DO hereby certify that the within and foregoing is a true and correct copy of the original as the same appears on the records of the Department of the Interior.

WITNESSED my hand and the seal of the Department of the Interior at Washington, D.C., this 1st day of January, 1901.

JOHN D. BROWN,  
Secretary of the Interior.

RECORDED - 1000

FILED - 1000

1901

THE UNITED STATES OF AMERICA  
DO hereby certify that the within and foregoing is a true and correct copy of the original as the same appears on the records of the Department of the Interior.

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JOHN D. BROWN,  
Secretary of the Interior.

Trusting this explanation to be satisfactory, I am

Very respectfully,  
(s) Anna L. Bauman

Fowler, Montana,  
October 11, 1922.

Mr. C. R. Stillinger,  
Helena, Montana.

Dear Mr. Stillinger:

As my school consists of only three children and all from the same family we did not succeed in finding a single case of the White Pine Blister Rust. The children looked for it along the river and I made inquiries as to the extent of the cultivation of black currants and gooseberries, in this community. However, I did not hear of any one raising these berries. From what I could gather the people think it is too dry to raise any kind of fruit in this locality.

If I can be of any further service to the state in the "great fight" I will be glad to do so.

Yours truly,  
(s) Edith Axtell,

Salesville, Montana,  
October 11, 1922.

Mr. C. R. Stillinger,  
Pathologist,  
Helena, Montana.

Dear Sir:

I received your card today stating that you had not received my report on the White Pine Blister Rust Survey. I am sorry, but I received the material only a short time ago.

The six older children in my school were very much interested and we have tried to find specimens.

I am a stranger in the canyon and have not had a chance to visit very many places.

I have not seen a black currant bush and the children tell me that they do not grow here. Once in a while they have seen them on a trip, but we can't go to them to examine them.

Vol. 27, No. 19  
May 1, 1919

Published by the American Medical Association  
535 North Dearborn Street, Chicago, Ill.

Subscription price, Five Dollars per Annum in Advance  
Single Copies, Fifteen Cents

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Upon examining the service berry leaves, we found a growth similar to the rust but the pamphlet stated that it comes on black currants, gooseberries and white pine. If it does grow on the service berry there are some in a number of places near our school house. One child who lives seven miles from here said he thought he had seen it on their gooseberry bushes, but isn't sure, and has not had a chance to bring a specimen to me because he goes home only once a week.

I am sorry I cannot make a better report, but I shall do all I can by keeping my eyes open and have the children keep watching and if we find anything more definite, we will report.

Sincerely,  
(s) Avis C. Megee.

Ovando, Montana,  
November 3, 1922.

I have posted your poster in the schoolroom, read the circulars to the children and urged them repeatedly to try to find specimens like the pictures on gooseberry bushes, currant bushes or trees, but so far have not been able to locate a single specimen of the White Pine Blister Rust. Have also talked with some of the old folks who raise gooseberries, and looked for it in the woods. Yellow pine, bull pine and jack pine grow near here, but no white pine. Wishing you success in stamping out this disease, I am

Yours sincerely,  
(s) Chas. H. Duncan.

Hathway, Montana  
October 4, 1922.

State Department of Agriculture,  
Capital Building,  
Helena, Montana.

Dear Sir:

I am sending you some twigs from the pine trees near our school.

The children and I have looked for the blister rust but did not find any that we thought had it.

The needles or leaves have fallen from the pine trees during the summer, caused by a bug, then little worms.

We are sending some of the worms found at the foot of the trees where they had fallen.





These worms have attacked the pine trees in the southeastern part of Rosebud county and the southwestern part of Custer county.

Could anything be done to control these bugs and worms?

Very truly,  
(s) Elizabeth Martin.

Bozeman, Montana,  
November 5, 1922.

Mr. C. R. Stillinger,  
Helena, Montana.

Dear Sir:

I took the White Pine Blister Rust poster and pamphlet to my school and talked to the children about it, then let some of them take the poster home to see if they could find anything like it. I had them examine their currant bushes and all the pines they come in contact with. They either didn't understand or couldn't find any.

I have the poster in the school room now where they can all see it and every once in a while we bring it up especially in Geography.

Respectfully,  
(s) (Mrs.) Pearl Kellams.

Whitefish, Montana,  
October 4, 1922.

We have all looked carefully and have seen only a few white pines which are natural growth. There are no black currant bushes in the district as far as we know and no specimens of the disease have been brought in. I have delayed sending to give the children a better chance to look. They have all looked thoroughly and have seen no trace of the disease so far.

Respectfully,  
(s) Olive Passey.

Kila, Montana,  
October 14, 1922.

Mr. C. R. Stillinger,  
Helena, Montana.

Dear Sir:

I am sorry that I neglected sending in our report on the White

THE SECRETARY OF THE ARMY  
WASHINGTON, D. C.  
JAN 10 1918

TO THE SECRETARY OF THE ARMY  
WASHINGTON, D. C.

FROM THE SECRETARY OF THE ARMY  
WASHINGTON, D. C.

RECEIVED  
JAN 10 1918

(10)

THE SECRETARY OF THE ARMY  
WASHINGTON, D. C.  
JAN 10 1918  
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(10)

THE SECRETARY OF THE ARMY  
WASHINGTON, D. C.



Pine Blister Rust. I had the mistaken idea that it was not necessary to do so where no signs of the disease were present.

There are white pines also wild and tame gooseberry bushes and tame currant bushes. However, my pupils and I made a thorough and extended investigation in various parts of the vicinity and not the faintest trace of the disease in any stage could be found.

I will gladly keep the affair in mind however and let you know promptly if any signs appear.

Yours truly,  
(s) (Miss) Rozillia Orr.

Dillon, Montana,  
September 19, 1922.

Our school closes this week. We have very few trees here, in fact not any planted. The nearest timber is about two miles. Children are moving away as this is a homestead locality. We have read the bulletin very carefully and are prepared to detect the disease. Our poster will be moved from school to a conspicuous place on main road. There are not any cultivated currants or gooseberries here. Having school here only during the summer will prevent us from doing further work this year, as we are completing our term September 22.

(s) Wayne M. Peets.

#### XIV. Suggested changes in future school programs or surveys.

1. No specific time should be stated in the program for carrying it out, especially if the campaign is to be staged near the beginning of school. This program was weak in that it stated that the campaign was to be carried on during the second week of school. Most of the material was not delivered until later than this period. This was the cause for some teachers not carrying out the campaign.

2. In the case of independent school districts, that is in the schools of the larger cities, it seems best to handle the matter through the city superintendents instead of trying to deal with the teachers direct. At least the matter should be taken up with the superintendent at the time that the material is sent to his teachers.

3. The letter "To the Teacher" should be more concise, shorter, and the paragraphs should be briefer.

4. As far as possible there should be but one subject upon which the teacher is to report. In this campaign it was emphasized to look for the disease and locate English Black currants and planted white pine. As shown on Table II, some teachers reported on one thing, some on another, so that the reports were not uniform in the information that they contained.

1. The first part of the report deals with the general situation of the country and the progress of the work during the year.

2. The second part of the report deals with the results of the work during the year and the progress of the work during the year.

3. The third part of the report deals with the results of the work during the year and the progress of the work during the year.

4. The fourth part of the report deals with the results of the work during the year and the progress of the work during the year.

5. The fifth part of the report deals with the results of the work during the year and the progress of the work during the year.

6. The sixth part of the report deals with the results of the work during the year and the progress of the work during the year.

7. The seventh part of the report deals with the results of the work during the year and the progress of the work during the year.

8. The eighth part of the report deals with the results of the work during the year and the progress of the work during the year.

9. The ninth part of the report deals with the results of the work during the year and the progress of the work during the year.

10. The tenth part of the report deals with the results of the work during the year and the progress of the work during the year.

11. The eleventh part of the report deals with the results of the work during the year and the progress of the work during the year.

12. The twelfth part of the report deals with the results of the work during the year and the progress of the work during the year.



5. The report form should be very simple. In filling out the form used in this campaign many teachers listed the owners of currants and gooseberries under the column for black currants so that in some cases it was not clear whether the plantings reported were black currants or other currants and gooseberries.

6. Smaller return envelopes should be used. Those used in this campaign were too large so that they were badly mutilated in the mails and some were lost.

7. The number system that has proved so efficient in time saving in this campaign should be placed upon the report form instead of on the return envelope or on both.

#### XV. Recommended follow-up work.

A strictly black currant campaign should be carried out during the spring of 1923. The following campaign is recommended.

#### BLACK CURRANT SCHOOL CAMPAIGN.

##### 1. Object:

A. As an educational follow-up to the fall campaign in order to inform the teachers and students and consequently the general public concerning the present status of the blister rust situation as well as the results of the school campaign last fall.

B. To secure the location of as many black currant plantings as possible.

The chief blister rust work during the summer season of 1923 in the northwestern states will be the location and eradication of all black currants. This will locate many plantings of black currants in isolated places where they may be overlooked by a scout. The records will serve as a check upon the work of the scouts next summer and enable us to determine how efficient the scouting is being done. It will be a cheap way of locating plantings. Likewise through this preliminary dissemination of information the foundation will be laid in the public for next summer's work.

C. It will keep alive the interest of the teachers and children and consequently the general public in the disease. It will make active scouts of all of these people during the spring and summer months.

##### 2. Territory:

It does not seem desirable to carry on the black currant campaign in those counties in which there are no pines or forests, that is, the prairie counties. The following are the counties in which the campaign should be carried out. The number of teachers in each county, whose names and addresses we have are indicated after each county.

5. The report form should be very simple. In filling out the form used in this campaign many teachers listed the names of children and addresses under the column for place. It was not clear whether the children listed were placed in other currents and addresses.

6. Smaller report forms should be used. Those used in this campaign were too large so that they were badly mutilated in the field and some were lost.

7. The number system that is a proved so efficient in time saving in this campaign should be placed upon the report form instead of in the return envelope as on both.

#### IV. Recommended follow-up work.

A statistic black current campaign should be carried out during the spring of 1935. The following campaign is recommended.

#### Black Current Campaign

##### I. Object:

- A. As an educational follow-up to the fall campaign in order to inform the teachers and students and consequently the general public concerning the present status of the black current situation as well as the results of the school campaign last fall.
- B. To secure the location of as many black current plantings as possible.

The chief object of the work during the summer season of 1935 in the northwestern states will be the location and eradication of all black currents. This will locate many plantings of black currents in isolated places where they may be overlooked by a scout. The scouts will serve as a check upon the work of the scouts next summer and enable us to determine how efficient the scouting is being done. It will be a cheap way of locating plantings. Likewise through this preliminary dissemination of information the eradication will be laid in the public for next summer's work.

C. It will keep alive the interest of the teachers and children and consequently the general public in the disease. It will make active scouts of all of these people during the spring and summer months.

##### II. Territory:

It does not seem desirable to carry on the black current campaign in those counties in which there are no pines or forests, that is, the prairie counties. The following are the counties in which the campaign should be carried out. The number of teachers in each county, whose names and addresses we have are indicated after each county.

| <u>County</u>   | : Number of<br>: Teachers : | <u>County</u>      | : Number of<br>: Teachers : |
|-----------------|-----------------------------|--------------------|-----------------------------|
| Beaverhead      | : 43 :                      | Madison            | : 91 :                      |
| Big Horn        | : 67 :                      | Meagher            | : 55 :                      |
| Broadwater      | : 23 :                      | Mineral            | : 30 :                      |
| Carbon          | : 143 :                     | Missoula           | : 164 :                     |
| Cascade         | : 145 :                     | Musselshell        | : 121 :                     |
| Deerlodge       | : 0 :                       | Park               | : 96 :                      |
| Fergus          | : 207 :                     | Pondera            | : 72 :                      |
| Flathead        | : 198 :                     | Powell             | : 23 :                      |
| Gallatin        | : 163 :                     | Ravalli            | : 91 :                      |
| Glacier         | : 15 :                      | Sanders            | : 75 :                      |
| Golden Valley   | : 47 :                      | Silver Bow         | : 271 :                     |
| Granite         | : 41 :                      | Sweet Grass        | : 64 :                      |
| Jefferson       | : 56 :                      | Teton              | : 81 :                      |
| Judith Basin    | : 77 :                      | Wheatland          | : 56 :                      |
| Lewis and Clark | : 150 :                     | Stillwater         | : 96 :                      |
| Lincoln         | : 83 :                      | <u>Yellowstone</u> | : 147 :                     |
|                 |                             | <u>Total</u>       | 2991                        |

### 3. Supplies:

3,100 white, franked envelopes 4-1/2 x 10-1/2"  
 3,000 envelopes with return address 4 x 10" addressed to  
     C. R. Stillinger,  
         State Department of Agriculture,  
         Division of Horticulture,  
         Missoula, Montana.  
 3,000 synopsis of Blister Rust  
 6,000 franked post cards for follow-up work and acknowledg-  
     ing reports  
 3,000 letters to teachers (see sample)  
 3,000 report forms on paper that will take ink  
 3,000 suggestions to teachers (see sample).

### 4. Procedure:

- (1) Date, April 16 to 20, 1923.
- (2) Envelopes to be addressed at the Seattle Office.
- (3) Return envelopes: a stamp to be made and these stamped at the  
    Seattle office.
- (4) Letters and forms to be mimeographed at the Seattle office.
- (5) Letters will be mailed from the Seattle office April 11, 1923.
- (6) Replies will be returned to Missoula.





(7) Whoever is to take charge of the Montana work will be relieved from quarantine work and go to Missoula May first and handle the details of the work incidental to the general organization of the Montana work. Mr. Shovell will make available some stenographic help.

(Note: It is my intention to have the hand addressing and stuffing of the envelopes done during March by one of the inspectors at one of the points of inspection where the work is light such as Pendleton or Pasco. The mimeographing will be done at Seattle. The plain envelopes should be ordered from Washington immediately. The campaign will be carried out as a federal work in cooperation with Mr. Shovell of the State Department of Agriculture, Montana, and consequently the headings of the form letters will not need to coincide with those used last fall.)

UNITED STATES DEPARTMENT OF AGRICULTURE  
Bureau of Plant Industry.

Blister-Rust Control

Missoula, Montana,  
April 11, 1923.

To the Teacher:

The White Pine Blister Rust school campaign carried out during the fall of 1922 in the schools of Montana was very successful. A hearty response was received from the teachers. No Blister Rust was found in Montana.

Last summer's survey, however, in the northwestern states and British Columbia revealed the disease generally distributed in the coast region of Washington and in British Columbia. Moreover, it was found at Revelstoke and Beaton, British Columbia. These points are only about one hundred miles north of the vast white pine stands in Idaho and Montana. This is the infection area that now threatens the vast inland white pine stands. Canada is doing and will do all that she can to protect us.

On our part every effort must now be made to stop the spread of the disease into the valuable timber stands of Montana. Past experience with the disease has proved that the English Black Currant is the most potent factor in establishing and spreading the disease in a community. This currant is generally of little commercial value in a community. Therefore, the experts of the United States Department of Agriculture and of the State of Montana have decided that the most important step to take now in combating the disease is to locate all black currants, inspect them frequently and urge their eradication in every community. This will retard the natural spread of the disease.

All state and federal agencies are cooperating in this work. In this work the teacher and her pupils can help in a very material and inexpensive way. Again we ask for your active cooperation. Again call the attention of your students to the disease (see inclosed synopsis). Ask them to search for black currants at home as well as at their neighbors and report to you any that they may find.



(7) However, it is to be noted that the work done by the various groups will be reviewed from time to time and go to the various groups first and handle the details on the work assigned to the general organization of the various groups. Mr. Howell will make available some stenographic help.

(Note: It is my intention to have the hand addressing and stamping of the envelopes done during which one of the inspectors at one of the points of inspection where the work is light such as Hamilton or Essex. The investigation will be done at night. The plain envelopes should be ordered from Washington immediately. The campaign will be carried out as a general work in cooperation with Mr. Howell of the State Department of Agriculture, Montana, and consequently the message of the form letters will not need to coincide with those used last fall.)

# UNITED STATES DEPARTMENT OF AGRICULTURE Bureau of Plant Industry

Director-General

Missouri, Montana,  
April 11, 1925.

to the Director:

The White Pine blight must be a serious campaign carried out during the fall of 1925 in the schools of Montana was very successful. A fairly response was received from the teachers. No blight was found in Montana.

Last summer's survey, however, in the northwestern states and British Columbia revealed the disease generally distributed in the coast region of Washington and in British Columbia. Moreover, it was found at Hamilton and Boston, British Columbia. These points are only about one hundred miles north of the west white pine stands in Idaho and Montana. This is the infection area that now threatens the vast inland white pine stands. Canada is doing all it can to protect us.

In our last every effort must be made to stop the spread of the disease into the valuable timber stands of Montana. Last experience with the disease has proved that the British blight is the most potent factor in establishing and spreading the disease in a community. This current is generally of little commercial value in a community. Therefore, the experts of the United States Department of Agriculture and of the State of Montana have decided that the most important step to take now in combating the disease is to locate all black currants, inspect them frequently and urge their eradication in every community. This will retard the natural spread of the disease.

All state and federal agencies are cooperating in this work. In this work the teacher and her pupils can help in a very material and inexpensive way. Again we ask for your active cooperation. Again call the attention of your students to the disease (see enclosed pamphlet). Ask them to search for black currants at home as well as in their neighbors and report to you any that they find.

If you will record the information reported by the students on the form and mail it in the inclosed, addressed envelope, you will have aided greatly in this work.

The students of course will also be on the lookout for the disease and report anything that is suspicious.

Thanking you for your past and future cooperation in this work, I am

Very truly yours,  
C. R. Stillinger,  
Pathologist.

P. S. I am inclosing as a suggestion several methods which teachers have used in adapting the school campaign to their regular work with the hope that they may be helpful in carrying out this campaign.

#### SUGGESTIVE METHODS OF PRESENTING THE BLISTER RUST PROGRAM TO THE STUDENT

The following methods of adapting the blister rust control school campaign to the regular school program were used by teachers in the fall campaign. They are given as a suggestion to the busy teacher.

1. As an exercise in writing the student may be required to write a paragraph on the White Pine Blister Rust after the teacher has read the "Synopsis of Blister Rust" to them. They could then go out looking for black currant plantings and be able to explain why they were looking for them.
2. As a letter writing exercise, the student after searching for black currants may write his report in the form of a business letter addressed to the U. S. Department of Agriculture. The results in these letters could be tabulated by the teacher or the letters sent in direct as a report.
3. Botany classes may be required to collect leaves and stems of black currants as a study in buds and leaves of plants.
4. Agricultural classes and general science classes may use the subject of Blister Rust as an example for a discussion of how diseases affect the economic values of crops. Then the student could be asked to help in this particular problem by locating the black currants in his community.
5. In art study classes the teacher may have the students collect currant leaves, draw or paint them and then turn in the material to the teacher.
6. The study of pine trees and black currants as well as other currants and gooseberries can be made the basis for spring field trips.
7. Competition between divisions of a class, of different classes and of different grades over a period of a week as to which group can find the most plantings of black currants may be used effectively in this work.

If you will record the information reported by the students on the form and mail it in the inclosed, addressed envelope, you will have aided greatly in this work.

The students of course will also be on the lookout for the disease and report anything that is suspicious.

Thanking you for your past and future cooperation in this work, I am

Very truly yours,  
O. L. Hillinger,  
Pathologist.

I am inclosing as a suggestion several methods which teachers have used in adapting the school campaign to their regular work with the hope that they may be helpful in carrying out this campaign.

#### ADAPTIVE METHODS OF PRESENTING THE SUBJECT TO THE STUDENT

The following methods of adapting the blaster test control school campaign to the regular school program were used by teachers in the fall campaign. They are given as a suggestion to the busy teacher.

1. As an exercise in writing the student may be required to write a paragraph on the blaster test after the teacher has read the "Synopsis of blaster test" to them. They could then go out looking for black current plantings and be able to explain why they were looking for them.

2. As a letter writing exercise, the student after searching for black currants may write his report in the form of a business letter addressed to the U. S. Department of Agriculture. The results in these letters could be tabulated by the teacher or the letters sent in direct as a report.

3. Botany classes may be required to collect leaves and stems of black currants as a study in buds and leaves of plants.

4. Agricultural classes and general science classes may use the subject of blaster test as an example for a discussion of how diseases affect the economic values of crops. Then the student could be asked to help in this particular problem by locating the black currants in his community.

5. In art classes the teacher may have the students collect currant leaves, draw or paint them and then turn in the material to the teacher.

6. The study of pine trees and black currants as well as other currants and gooseberries can be made the basis for spring field trips.

7. Competition between divisions of a class, or different classes and or different grades over a period of a week as to which group can find the most plantings of black currants may be used effectively in this work.



## COOPERATIVE BLISTER RUST SCHOOL CAMPAIGN

## LOCATION OF ENGLISH BLACK CURRANTS

Town \_\_\_\_\_ County \_\_\_\_\_ School District No. \_\_\_\_\_ Date \_\_\_\_\_

Teacher's name \_\_\_\_\_ Address \_\_\_\_\_ No. pupils \_\_\_\_\_ Grade \_\_\_\_\_

## LIST OF BLACK CURRANT PLANTINGS FOUND

INSTRUCTIONS: Have each student report whether he has any black currants growing at his home. He should also determine by inquiry or examination whether his neighbors possess any black currants. If uncertain whether the currants are black, send in samples of the leaves with this report. See "Synopsis of Blister Rust" for description of methods of identifying the black currant.

[illegible][illegible]

Teacher's name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_  
State \_\_\_\_\_  
Zip \_\_\_\_\_  
Phone \_\_\_\_\_  
E-mail \_\_\_\_\_

of methods or identifying the black content.

1. SO. AND. C. 25 JUNE 1964 TO 1964 TO 24 JUNE 1964 IN UNSM 1. SO. AND. C. 25 JUNE 1964 TO 1964 TO 24 JUNE 1964 IN UNSM

This image shows a full page of blank graph paper. The grid consists of thin, light gray horizontal and vertical lines that intersect to form small squares across the entire surface. There are no margins, text, or other markings on the paper.



## SYNOPSIS OF BLISTER RUST

Pine Attacked: This disease is one which attacks only the white (five-needled) pines. The five-needled pines in the West are the western white pine, the sugar pine, the white barked pine and the limber pine.

The Disease: It is a parasitic plant that obtains all of its feed from another plant. It is not an insect. It grows under the bark of the pine and thus eventually kills it. The disease spends part of its life on the pine and part on the leaves of the currants and gooseberries. To complete its life growth it must go from currant to white pine and back to currant. It cannot spread from pine to pine direct. It can spread from currant to currant or gooseberry to gooseberry.

Distribution of the Disease in the West: The disease besides occurring in the East is quite generally distributed in all the coast region of British Columbia and Washington. Also a heavy infection area occurs at Revelstoke and Beaton, British Columbia, points about one hundred miles north of the pine stands of Idaho and Montana. Scouting during the year of 1922 failed to reveal the disease in any other localities in the Northwest. It is probably firmly established where it now exists.

Damage: In some areas in British Columbia the disease is epidemic. In one area near Daisy Lake, British Columbia, where the disease has been for about ten years, 90 per cent of the white pine trees are dead. In another area in an older stand of white pine near Daisy Lake, 40 per cent of the trees are now dead and in ten years probably over 90 per cent will be dead.

Importance of the English Black Currant: Past experience with this disease has well established the importance of the English Black Currant. It is many times more susceptible to the disease, and develops the disease more rapidly and abundantly than any other currant or gooseberry. Consequently it spreads the disease more rapidly and much further. New infections of Blister Rust are generally found centering around a planting of black currants.

What is to be done: In analyzing the foregoing situation the experts of the U. S. Department of Agriculture and of the different states have decided that an effort must be made to keep the disease where it now is by employing every means possible to hinder the natural or artificial spread. Regulations have been passed forbidding the shipment of currant, gooseberry or white pine plants out of the infected areas. The next most necessary measure to take is to locate and inspect all plantings of black currants and at the same time urge their owners to destroy them. The inspection of the plants will determine whether the disease is already present. Their eradication will delay the natural spread of the disease as well as reduce very greatly the possibility of the future establishment of the disease in that community. The general public is asked to help, can help and should help in this work.

IT COSTS LESS TO KEEP IT OUT THAN IT WILL TO COMBAT IT WHEN IT ONCE IS INTRODUCED

How to tell the English Black Currant from other Currants: This currant has a very distinct skunk-like odor which is evident when near the plant or if a portion of a twig or leaf is slightly crushed. Other currants and gooseberries have no definite odor. Also, on the under sides of the leaves are small yellowish minute spots visible to the naked eye. These are uniformly distributed over the leaf. It is from these yellowish spots that the peculiar odor originates. Further, the fruit is black.

Line Attached: This disease is one which attacks only the white (live-needed) lines. The live-needed lines in the West are the western white pine, the sugar pine, the white-barked pine and the timber pine.

The Disease: It is a parasitic plant that obtains all of its food from another plant. It is not an insect. It grows under the bark of the live and thus eventually kills it. The disease spreads out a life on the pine and part on the leaves of the branches and gooseberries. To complete its life growth it must go from current to white pine and back to current. It cannot spread from pine to pine direct. It can spread from current to current or gooseberry to gooseberry.

Distribution of the disease in the West: The disease besides occurring in the West is quite generally distributed in all the coast region of British Columbia and Washington. Also a heavy infection was found at Revelstoke and Weston, British Columbia, points about one hundred miles north of the pine stands of Idaho and Montana. Counting during the year of 1923 failed to reveal the disease in any other localities in the Northwest. It is probably finally established where it now exists.

Damage: In some areas in British Columbia the disease is epidemic. In one area near Daisy Lake, British Columbia, where the disease has been for about ten years, 90 per cent of the white pine trees are dead. In another area in an older stand of white pine near Daisy Lake, 40 per cent of the trees are now dead and in ten years probably over 90 per cent will be dead.

Importance of the English Black Current: As an experience with this disease has well established the importance of the English Black Current. It is many times more susceptible to the disease, and develops the disease more rapidly and abundantly than any other current or gooseberry. Consequently it spreads the disease more rapidly and much further. New infections of bilister have generally found entry into a new planting of black currants.

What is to be done: In analyzing the foregoing situation the experts of the U. S. Department of Agriculture and of the different states have decided that an effort must be made to keep the disease where it now is by employing every means possible to hinder the natural or artificial spread. Regulations have been passed forbidding the shipment of current, gooseberry or white pine plants out of the infected areas. The next most necessary measure to take is to locate and inspect all plantings of black currants and at the same time urge their owners to destroy them. The inspection of the plants will determine whether the disease is already present. Their eradication will delay the natural spread of the disease as well as reduce very greatly the possibility of the future establishment of the disease in that community. The general public is asked to help, can help and should help in this work.

IT COSTS LESS TO KILL IT OUT THAN IT DOES TO COMBAT IT WHEN IT GROWS IN THE FOREST  
How to tell the English Black Current from other Currents: This current has a very distinct skunk-like odor which is evident when near the plant or in a portion of a twig or leaf is slightly crushed. Other currents and gooseberries have no definite odor. Also, on the under sides of the leaves are small yellowish minute spots visible to the naked eye. These are uniformly distributed over the leaf. It is from these yellowish spots that the peculiar odor originates. Further, the fruit is black.



## SCHEME OF HANDLING MONTANA SCHOOL CAMPAIGN

1. Work to be carried on through the State Horticultural Office at Missoula, Montana.
2. Mr. Shovell will make available his clerical help.
3. Office of Blister Rust Control will provide a man to carry on the details of the work.
4. Whole program to be under the supervision of Mr. Stillinger.
5. Letters to teachers to be signed by Stillinger, (Exhibit 2).
6. Mr. Shovell, the superintendent of Public Instruction and each county superintendent to give an indorsement of the campaign which will be inclosed with the program.
7. Send to each teacher.
  - (1) One poster.
  - (2) One folder 226
  - (3) Two sets of form reports (Exhibit 3)
  - (4) One letter to the teachers signed by C. R. Stillinger (Ex. 2)
  - (5) " " of indorsement from Mr. Shovell (Exhibit 4)
  - (6) " " " " " State Superintendent (Exhibit 5)
  - (7) " " " " " county superintendent (Exhibit 6)
8. School campaign to be carried on during the second week of school.
9. School campaign to be carried out in the following counties:

| <u>County</u>   | <u>Number of :</u><br><u>Teachers</u> | <u>County</u> | <u>Number of :</u><br><u>Teachers</u> |
|-----------------|---------------------------------------|---------------|---------------------------------------|
| Beaverhead      | : 117                                 | Madison       | : 115                                 |
| Bighorn         | : 78                                  | Meagher       | : 59                                  |
| Broadwater      | : 53                                  | Mineral       | : 35                                  |
| Carbon          | : 174                                 | Missoula      | : 219                                 |
| Cascade         | : 426                                 | Musselshell   | : 197                                 |
| Chouteau        | : 214                                 | Park          | : 150                                 |
| Deerlodge       | : 90                                  | Pondera       | : 95                                  |
| Fergus          | : 495                                 | Powell        | : 83                                  |
| Flathead        | : 217                                 | Ravalli       | : 115                                 |
| Gallatin        | : 206                                 | Sanders       | : 87                                  |
| Glacier         | : 50                                  | Silver Bow    | : 342                                 |
| Golden Valley   | :                                     | Stillwater    | : 138                                 |
| Granite         | : 56                                  | Sweetgrass    | : 86                                  |
| Jefferson       | : 73                                  | Teton         | : 109                                 |
| Judith Basin    | :                                     | Toole         | : 95                                  |
| Lewis and Clark | : 168                                 | Wheatland     | : 84                                  |
| Lincoln         | : 100                                 | Yellowstone   | : 312                                 |

# THE PROPOSED AMENDMENTS TO THE CONSTITUTION

1. The proposed amendments to the Constitution shall be subject to the following provisions:

(a) The proposed amendments shall be subject to the following provisions:

(b) The proposed amendments shall be subject to the following provisions:

(c) The proposed amendments shall be subject to the following provisions:

(d) The proposed amendments shall be subject to the following provisions:

(e) The proposed amendments shall be subject to the following provisions:

(f) The proposed amendments shall be subject to the following provisions:

|  |  | PROPOSED AMENDMENTS |                     |
|--|--|---------------------|---------------------|
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|  |  | PROPOSED AMENDMENTS | PROPOSED AMENDMENTS |
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(g) The proposed amendments shall be subject to the following provisions:

(h) The proposed amendments shall be subject to the following provisions:

| PROPOSED AMENDMENTS |      | PROPOSED AMENDMENTS |      |
|---------------------|------|---------------------|------|
| PROPOSED AMENDMENTS |      | PROPOSED AMENDMENTS |      |
| 1.                  | 1.   | 1.                  | 1.   |
| 2.                  | 2.   | 2.                  | 2.   |
| 3.                  | 3.   | 3.                  | 3.   |
| 4.                  | 4.   | 4.                  | 4.   |
| 5.                  | 5.   | 5.                  | 5.   |
| 6.                  | 6.   | 6.                  | 6.   |
| 7.                  | 7.   | 7.                  | 7.   |
| 8.                  | 8.   | 8.                  | 8.   |
| 9.                  | 9.   | 9.                  | 9.   |
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| 16.                 | 16.  | 16.                 | 16.  |
| 17.                 | 17.  | 17.                 | 17.  |
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| 44.                 | 44.  | 44.                 | 44.  |
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| 46.                 | 46.  | 46.                 | 46.  |
| 47.                 | 47.  | 47.                 | 47.  |
| 48.                 | 48.  | 48.                 | 48.  |
| 49.                 | 49.  | 49.                 | 49.  |
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UNITED STATES DEPARTMENT OF AGRICULTURE  
OFFICE OF BLISTER RUST CONTROL

Helena, Montana,  
September 1, 1923

To the Teachers:  
State of Montana.

An insidious pine-killing disease threatens to spread from the Puget Sound region of Washington and British Columbia to the commercial white and sugar pines that are worth more than a billion dollars to the people of Washington, Idaho, Oregon, California and Montana.

In order to save the pines it is necessary to know (1) the location of every diseased pine, gooseberry and current bush in the State; (2) the location of planted white pines, because the disease may have been imported on these; and (3) the location of cultivated black currants, often called English currants, because these are the worst spreaders of the disease.

The U. S. Department of Agriculture, the State Department of Agriculture of Montana, the State Forester and the State Department of Education are cooperating in this work. The state is so vast that this essential information cannot be obtained without the assistance of the school children.

Please read the enclosed leaflet to your pupils and show them the pictures. Place the poster where the students may have it constantly for reference. Ask each pupil as he goes to and from school and about his home during the second week of school, to look for the disease on all currants, gooseberries and white (5-needled) pines.

Ask them to bring to you specimens that look like the disease, also to report to you the location and approximate number of planted black currants and planted white pines they find.

Then if you will send these specimens and the report blank in the enclosed addressed envelope you will have assisted materially in our effort to save our commercial stands of white and sugar pines.

This plan of assisting to save the pines of the West and incidentally of creating in the children a greater interest in plant life have been approved and heartily endorsed by the Superintendent of Schools, the Montana State Department of Agriculture and the State Forester. They urge strongly your cooperation in making this survey a success.

Thanking you sincerely for your cooperation, I am,

Yours truly,  
C. R. Stillinger,  
Pathologist,  
U. S. Department of Agriculture.





# REPORT BY TEACHER ON STUDENT INSPECTION FOR WHITE PINE BLISTER RUST.

THIS REPORT IS TO BE SUBMITTED AT THE END OF THE SECOND WEEK OF YOUR SCHOOL. A REPORT IS TO BE MADE UNDER ANY AND ALL CIRCUMSTANCES

Town.....County.....School District No.....Name of School.....Grade.....

Teacher's name ----- Address -----  
No. pupils participating ----- Date -----

## SUMMARY OF STUDENTS REPORTS

**INSTRUCTIONS:** As far as possible get the location from the students of all cultivated English Black currants and planted white pine. Submit specimens of everything that looks like the disease. Inclose specimens in an envelope or paper bearing name of student, location of plants and name and address of owner.

[illegible]

[illegible]

STATE OF MONTANA  
DEPARTMENT OF AGRICULTURE  
LABOR AND INDUSTRY

Commissioner of Agriculture  
Chester C. Davis

Division of Horticulture  
W. L. Shovell, Chief

Chamber of Commerce Bldg.,  
Missoula, Montana,  
September 1, 1923.

To Whom It May Concern:

A great menace to the native white pine forests of the Northwest has made its appearance in the form of a disease known as White Pine Blister Rust. This disease has ruined thousands of acres of the best white pine forests of the East and is now seriously threatening the West.

The Bureau of Plant Industry and the different State Departments co-operating are putting on a campaign to check the spread of this disease. Quarantines, both Federal and State have been established preventing the movement of blister rust hosts from out of the infected areas.

A great area in the Northwest has not been thoroughly scouted and although scouting parties are in the field the need for more assistance is felt. It is proposed to ask the aid of the school children in this work. The rust in one stage is found on the gooseberry and currant, and it is in examining these bushes that the children can be of material assistance. Aside from this it will awaken an interest in plant life and a realization of the value of our national forests that would be unobtainable in any other way.

This department wishes to place its unqualified endorsement of this work on record and to pledge its assistance in any way possible in an organized effort to stamp this disease out in the Northwest and to save our forests for posterity.

The Montana Department of Agriculture,

By: W. L. Shovell,

Chief, of the Division of Horticulture.







DEPARTMENT OF PUBLIC INSTRUCTION

Helena, Montana

August 22, 1923.

To Teachers of Montana:

The project of the U. S. Department of Agriculture designed to discover areas where the White Pine Blister Rust may be making progress seems to me to be one in which the school children can cooperate with great service to the department and with much profit and interest in nature study to themselves. I approve the plan of securing desired data in this way the second week of school, and trust the teachers of the state will be glad to make use of the posters and encourage children to assist in the undertaking.

Very truly,

May Trumper



SUPERINTENDENT OF SCHOOLS

STILLWATER COUNTY

COLUMBUS, MONTANA

September 1, 1923.

To The Teachers  
of Stillwater County.

I heartily endorse this plan in assisting to protect the vast white and sugar pine stands of the western states. School children while engaged in this work will render invaluable service to the commonwealth. Incidentally they will gain for themselves a greater interest in plant life and will come to better appreciate the sciences which are fundamental in agriculture and forestry. Therefore, I wish to urge you to cooperate fully and to carry out this program as thoroughly as possible. We can do a real public service in this way.

Very truly yours,

Jennie Moore,

County Superintendent.



## UNITED STATES DEPARTMENT OF AGRICULTURE

## Bureau of Plant Industry

Blister Rust Control

Helena, Montana,  
August 26, 1925.Miss Elizabeth Sutherland,  
County Superintendent of Beaverhead Co.,  
Dillon, Montana.

Dear Miss Sutherland:

White Pine Blister Rust, a very destructive pest of white pines, has recently been found in British Columbia and the Puget Sound region of Washington. At present every effort is being made to locate the disease if it occurs in Montana on planted white pine or cultivated gooseberries or currants, so that it may be stamped out before it reaches the native timber.

During the second week of school the United States Department of Agriculture in cooperation with the State Department of Agriculture, State Forester, and the State Department of Education will make a special effort through the use of the public schools to determine whether the white pine blister rust occurs in Montana. I am enclosing for your information literature concerning the disease and the program of action asked of the teacher.

The State Superintendent of Public Instruction has given her endorsement of the program, a copy of which I am enclosing, and at this time I am asking you to consider the plan. If you decide to cooperate with us in this work I shall appreciate it very much if you will sign the enclosed letter or write one covering the endorsement of the program so that it can be enclosed with the outlines, literature, etc., which we are forwarding to the teachers.

I am enclosing an addressed envelope for your reply and shall appreciate it if I may hear from you soon so that the supplies may be prepared. Thanking you now for the full cooperation that I am sure you will give, I am,

Very truly yours,

C. R. Stillinger,

Pathologist.

Enclosures.





(Statement on Post Card acknowledging report when no specimen  
is enclosed with report.)

This will acknowledge the receipt of your  
report on the White Pine Blister Rust survey.

I wish to thank you for your cooperation.

Very truly yours,

C. R. Stilling, Jr.,

Pathologist.

(Statement on Post Card acknowledging report when specimens  
were inclosed with the report.)

This will acknowledge the receipt of your report  
on the White Pine Blister Rust survey. The specimens  
which you enclosed were not Blister Rust.

I wish to thank you for your cooperation.

Very truly yours,

C. R. Stilling, Jr.,

Pathologist.



(Statement on first notice sent to teachers reminding them that they had not as yet sent in their reports.)

We have not received your report on the White Pine Blister Rust survey. Please forward this report as soon as possible. It is only through your cooperation that this survey can be made a success.

Thanking you for prompt attention to this matter, I am,

Very truly yours,  
C. H. Stillinger,  
Pathologist.

Helena, Montana,  
October 4, 1922.

(Used Oct. 4-13)

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Exhibit 10

(Statement on Post Card of second notice sent to teachers reminding them that they had not as yet sent in their reports.)

We have not received your report on the White Pine Blister Rust survey. We realize that some districts have no pines, and very few currants and gooseberry bushes, but we do not know the exact location of these areas. Enclose specimens of anything which you think might be blister rust. If you live in a barren section, make note of it on your report. Many teachers assume that such a report is of no value in the survey. However, from the standpoint of future work on this disease, it is important that we locate all the host plants in the state.

The educational department, state and county, have pledged their cooperation in this work, and if it is not a success, it will be due to lack of aid from the individual teachers. If you have had no opportunity to work in the survey, please fill in your name and address and forward the blanks.

With this information, I shall expect a report from you in a few days.

Very truly yours,  
C. H. Stillinger,  
Pathologist.





## DEPARTMENT OF PUBLIC INSTRUCTION

Helena, Montana

August 22, 1922

Dear County Superintendents:

Today Mr. C. R. Stillinger, pathologist of the U. S. Department of Agriculture, called at this office and explained the importance of securing the assistance of school children in detecting a disease known as White Pine Blister Rust which attacks white pine trees. At one stage of its progress it is to be found on currant and gooseberry bushes.

The ravages of this disease have accomplished so much damage to eastern forests, and there is so small a known area infected in the West that it seems every agency possible should cooperate in the discovery of any signs of its spreading here.

All you are asked to do is to send us the names of your teachers and their post office addresses for a mailing list for Mr. Stillinger. He has posters and instructions which he will send direct to the teachers. It is important to him to have the names early, as children will need to examine currant and gooseberry bushes before the leaves fall. The investigation can be confined to the spare time of children for one week and will doubtless prove an interesting investigation to most children. I can see no harm and much interest to be derived from such a bit of nature study, even in counties where there are but few, if any, pine trees.

Even though your list of teachers may not be entirely complete, please send it in by September first with the following information:

| No. | District | Name of teacher | Post Office<br>address |
|-----|----------|-----------------|------------------------|
|-----|----------|-----------------|------------------------|

Mr. Stillinger will soon send you his literature and ask your cooperation which I am sure you will be glad to grant him.

Very truly,

May Trumper.



DEPARTMENT OF PUBLIC INSTRUCTION

HELENA, MONTANA

September 18, 1922.

Miss Olive Lovett,  
County Supt. of Schools,  
Miles City, Montana.

My dear Miss Lovett:

I am making a third urgent appeal to you for your list of teachers for Mr. Stillinger. The list should be sent to this office. Please send it at once even though it is incomplete. The work of seeking White Pine Blister Rust must be done before the leaves fall off the currant and gooseberry bushes. Your incomplete list today will be of far more value than a complete list three or four weeks hence. Please give this matter your earliest attention.

Yours very truly,

May Trumper.



UNITED STATES DEPARTMENT OF AGRICULTURE  
Bureau of Plant Industry

Blister-Rust Control  
429 Lyon Building,  
Seattle, Washington.

Helena, Montana  
September 1, 1922.

I have received the partial list of school teachers for your county for which I wish to thank you. Material for the survey is being forwarded to this list of teachers. I note in comparing the number of teachers listed for your county and the list that you were able to provide, that there are a large number of teachers whose names and addresses I do not have. We are very anxious that this material reach every teacher and that the program be carried out in every school. Consequently, I am sending you in a separate shipment, packages ready for mailing to those teachers whose names you will obtain gradually. When you receive the names of teachers, other than those in the list which you have submitted to me, will you please mail one of these packages to each teacher.

We are endeavoring to have the material reach the teachers so that the survey can be carried on during the second week of school. If it does reach the teacher a little later there will be no objection. However, this survey must be carried on before the leaves fall from the currant and gooseberry bushes. The packages have been government franked so that you need not use any postage. If you can help me this much in carrying on this work, your cooperation will certainly be appreciated by both the Federal, State and private agencies.

I trust you will not think I am asking too much of you. Under the conditions this seems to be the only practical way to handle the matter. Hoping that you will give me this cooperation in this work and that the survey may be made as thorough and complete as possible, I am

Very truly yours,

C. R. Stillinger,  
Pathologist.





UNITED STATES DEPARTMENT OF AGRICULTURE  
Bureau of Plant Industry.

Blister-Rust Control  
429 Lyon Bldg.,  
Seattle, Washington

HELENA, MONTANA  
September 1, 1922.

I have not received the list of school teachers for your county. Material for the survey is being forwarded you. We are very anxious that this material reach every teacher and that the program be carried out in every school. Consequently, I am sending you in a separate shipment, packages ready for mailing to the teachers. When you receive their names will you please mail one of these packages to each of them.

We are endeavoring to have the material reach the teachers so that the survey can be carried on during the second week of school. If it does reach the teacher a little later there will be no objection. However, this survey must be carried on before the leaves fall from the currant and gooseberry bushes. The packages have been government franked so that you need not use any postage. If you can help me this much in carrying on this work, your cooperation will certainly be appreciated by both the Federal, State and private agencies.

I trust you will not think I am asking too much of you. Under the conditions this seems to be the only practical way to handle the matter. Hoping that you will give me this cooperation in this work and that the survey may be made as thorough and complete as possible, I am

Very truly yours,

C. R. Stillinger,

Pathologist.



UNITED STATES DEPARTMENT OF AGRICULTURE  
Bureau of Plant Industry.

Blister-Rust Control,  
429 Lyon Bldg.,  
Seattle, Washington

Helena, Montana  
October 6, 1922.

I trust that by this time you have mailed the material for the White Pine Blister Rust Survey, which was forwarded to you. I would like to have a list of the names and addresses to which you sent this material.

We are using every possible means to make this survey as complete as possible. It is evident that the greater number of these reports we receive, the greater will be the degree of our success in this work.

Cards will be sent to all teachers, whose report we do not have, urging that they return it at an early date. By having this list of teachers, in addition to the ones which you sent us early in September, we hope to reach everyone to whom material was forwarded.

I thank you for this favor.

Very truly yours,

C. H. Stillinger,

Pathologist.





UNITED STATES DEPARTMENT OF AGRICULTURE  
Bureau of Plant Industry

Blister-Rust Control  
429 Lyon Bldg.,  
Seattle, Washington

Helena, Montana  
October 20, 1922.

I wrote you some time ago asking you for a list of the teachers to whom you forwarded material for the White Pine Blister survey. Perhaps you overlooked the favor I asked of you. I am going to ask you again to furnish me with this list. Since teachers do not exert themselves unless reminded in some way to give a report.

Your hearty support is needed to make this survey a success. The State Department of Education has pledged its co-operation as have most of the counties. Many teachers give a good report after being reminded that one is expected, but we find that this follow-up work is necessary in order to get any number of replies.

Thanking you for prompt attention to this matter, I am,

Very truly yours,

C. R. Stillinger

Pathologist.



## 7. Scouting in Colorado

### SCOUTING FOR THE WHITE PINE BLISTER RUST IN COLORADO

By B. O. Longyear

As a collaborator with the Bureau of Plant Industry the writer has just completed a scouting trip through the western half of the state in search of possible occurrences of the white pine blister rust. A little more than fifteen hundred miles were covered by myself and a temporary assistant with a heavily laden Ford, over all kinds of roads and in the various kinds of weather to be experienced in the central Rocky Mountain region. The plan of travel involved the use of suitable camp equipment so that stops could be made wherever it seemed desirable altho week end stops at hotels or during bad weather were occasionally made. Meals were principally taken in camp, often beside the highway while enroute and sometimes while fighting the swarms of mosquitoes which in a few places proved very annoying.

An outline of the trip, when traced on a map, forms an irregular parallelogram with Laramie, Wyoming, Grand Junction, Durango, and Colorado Springs, Colorado, at the four chief angles. Leaving Fort Collins, Colorado, July 31 we journeyed north westward into southern Wyoming to Laramie, thence south westward into North Park, in Colorado, this route being selected as the most feasible one in reaching the western slope.

In Colorado the following towns and localities were visited in succession: Walden, Steamboat Springs, Craig, Meeker, Rifle, Grand Junction, Delta, Hotchkiss Paeonia, Montrose, Springs, Denver, and Fort Collins. In all twenty-nine days were used in covering this route. Nearly all of the driving was done by my assistant and at a moderate rate of speed which enabled me to study conditions along the route. Frequent stops were made along the way to examine the vegetation concerned in the trip and to climb ridges, explore gulches, and other formations where such vegetation occurs. The various native species of Ribes and Grossularia, which constitute the alternate host plants of the blister rust, were collected all along the route and made into herbarium specimens for future study. Watch was also kept for the occurrence of the species of pines which are susceptible to the pine blister rust disease, including Pinus edulis, P. flexilis, and P. aristata.

The first Pinus edulis encountered was near Owl Canyon, about eighteen miles north of Fort Collins. This grove is wholly isolated from any other extensive occurrence of the species. Beginning at Owl Canyon in widely scattered specimens the grove becomes denser northward along the single limestone ridge through which the Canyon passes, and terminates suddenly, with the limestone formation, about four miles northward in a rather dense stand containing some notably large trees. As this grove had been visited in company with Mr. L. H. Goodding, of the Bureau of Plant Industry, earlier in the year no stop was made at this point.



The first occurrence of *Pinus flexilis*, Limber Pine, was noted about one and one half miles above Woods Landing in southern Wyoming. Some time spent in careful examination of trees growing on rocky ridges at this point failed to show any recognizable evidence of the blister rust altho species of currant and gooseberry were common in gulches at the foot of the ridges. An *accidium* on gooseberry was collected here. Our route from here led thru portions of the Medicine Bow and Colorado National Forests at a maximum elevation of about 9,000 feet, lodgepole pine and Engelmann spruce constituting the timber species along the way. Considerable limber pine was noted on the ridges near the northern entrance to North Park. Limber Pine was again found just after leaving the souther end of North Park on the road over Rabbit Ears Pass. No rust was found on *Ribes* and *Crossularia* at the foot of the pine-bearing slopes with the exception of *Accidium* on the latter. At the summit of the pass compact bushes of *Ribes montigenum* were noted and specimens collected.

The character of the vegetation changes in a rather marked degree on the western side of the pass. The growth is ranker and of different species indicating great precipitation. *Ribes aureum* was noted at the lower elevations as we approached Steamboat Springs. Scrub oak also appears as a part of the open slope vegetation half way down from the summit. Between Steamboat Springs and Craig, *Ribes aureum* was found plentiful in moist situations but no fungous disease, whatever, were found. *Juniperus utahensis* was noted on dry hillsides near Hayden but no pinyon pine was found. Between Craig and Meeker pinyon pine was first met with about five miles north of the latter town. No *Ribes* was found in association with this species. Between Meeker and Rifle *Ribes aureum* was the only currant found, one plant showing slight infection with *Coleosporium*. Wherever pinyons occur no species of *Ribes* was found in association the reason apparently being due to the dryness of the sites.

In the locality of Rifle two plantings of English black currants were located out of the six listed, the others having been dug out by the owners or having never been received from the nurseries. Twelve bushes of Lees Currant were found at the ranch of Mrs. Chas. Miller, two miles east of Rifle, and twelve at the DeGriff ranch eight miles northeast of Rifle. In both cases the bushes were in a perfectly healthy, bearing condition so far as fungous diseases were concerned, the only troubles being evidently due to dryness and red spider which cause a browning of the leaves. The latter ranch is now owned by Mrs. Jack Shaggs who stated that they intend digging out their currants. Inspection of wild *Ribes aureum* along the river bottoms two miles southeast of Rifle, where this species is plentiful, showed no evidence of fungous diseases. Between Rifle, Palisade, and Grand Junction, almost no *Ribes* could be found, the conditions being evidently too dry. No European black currants were found at the ranch of Mr. Geo. Siprelle, three miles east of Grand Valley as they had been dug out several years ago.

No plantings of black currants were found at Fruita nor in the locality around Grand Junction with the exception of a considerable quantity of the native *R. aureum* at the ranch of Mr. Wm. Ingram, five miles southeast of Grand Junction along the river bottoms. No disease was found on these. All of the other parties listed in this region had either not received shipments of the European black currants or had dug them out as undesirable after a few years. The plantation listed under the name of J. L. Blaquieri was not





found. *Ribes aureum* has been freely planted in Whitman Memorial Park in the city but careful examination failed to reveal any fungous disease.

Between Grand Junction and Delta desert conditions prevail to such an extent as to exclude practically all *Ribes* except in a very few places. Practically no *Ribes* were found between Delta and Hotchkiss, and the same was true on the area lying between Hotchkiss and Paonia until quite near the latter town. None of the original plantings of English black currants listed for these two localities were found as they had either been dug out or otherwise destroyed some years ago. A plantation containing fifteen healthy bushes was found, however, at the Feldman home just across the river westward from town. No information could be gained about Mr. E. L. Munzer who is listed for this locality. Native *Ribes aureum* is quite plentiful in moist locations here but no diseased plants were found.

*Ribes aureum* in a healthy condition was found growing rather plentifully about six miles northwest of Montrose along the river bottoms. From Montrose to Ouray pinyon pines were found common but rarely in association with any species of *Ribes*. *Ribes inebrians* was found about two miles north of Ouray but outside of the pinyon zone, which does not reach this point. Three species of *Ribes*, *R. inebrians*, *R. wolfii*, and *R. lentum* = *R. montigenum*, were found near Ouray, the first species showing in one or two cases considerable *coleosporium* but no other fungous disease.

The only conifers noted in this locality are *Abies concolor*, *Pseudotsuga taxifolia*, *Picea Engelmanni*, *R. Parryana*, *Juniperus utahensis*, *J. scopulorum*, and *Pinus ponderosa*. The first named species is the conspicuous and dominant one here. Along the highway from Ouray to Silverton several species of currant and gooseberry were found sometimes in close association with *Pinus flexilis* but in no case was disease found.

The immediate locality around Durango is in the Yellow pine zone and conditions for development of any heteroecious fungus, dependent upon the white pines, is lacking in the main. *Pinus edulis* occurs plentifully in the region around the Ft. Lewis School of Agriculture, but practically no species of *Ribes* could be found in the pinyon areas examined. The same results were also determined in pinyon forests east of Mancos and between that town and Cortez.

No plantings of European black currants were found in the locality near Cortez, as listed, in most cases having been dug out. Native black currants were found in one garden but no disease was present.

In the Mesa Verde wild gooseberries, principally *G. inermis*, were found in moist situations among rocks and in canyons. In a few cases *Coleosporium* and *Accidium* were found on them but no *Cronartium*, altho *Pinus edulis* was near at hand. The woody vegetation of the Mesas consists of *Pinus edulis* and *Juniperus utahensis* in about equal proportions and in rather dense forests, with undergrowth of *Artemisia tridentata*, *Parshia*, *Amelanchier*, *Yucca baccata*, and *Ephedra*, but no *Ribes* was found. *Pseudotsuga* and *Quercus* sp. occur quite commonly in the canyons.

Between Durango and Pagosa Springs the largest planting of English black currants encountered on the trip was found at the ranch home



of Frank Wright, ten miles east of Durango. Forty bushes in a healthy condition, except for red spider injury, were found in addition to cultivated gooseberries and red currants. Gooseberry mildew was the only fungous disease found here.

Near Piedra Blanca *Ribes inebrians* occurs plentiful on dry slopes and is heavily infected with *Coleosporium* in some cases, *Ribes aureum* and *Grossularia* sp. become plentiful along the highway near Sayfield but none show disease.

From Pagosa Springs over Molid Creek Pass species of currant and gooseberry are not uncommon but none show disease. *Ribes inebrians* and *Pinus flexilis* are found growing in close association together with a species of gooseberry, but the only disease found was an *acidium* on the gooseberry. *Pinus edulis* also occurs in this locality the first point at which overlapping of this species with *P. flexilis* has been noted. Between South Fork and Del Norte *Ribes inebrians* was found in close association with an extensive growth of *Pinus edulis* but no rust was found.

North of Del Norte the highway skirts the eastern border of a pinyon and currant association among boulder like rocks for a number of miles. No rust was discovered here.

At Poncha Pass another overlapping in the occurrence of *Pinus edulis* and *P. flexilis*, together with *Ribes inebrians* and *Grossularia* sp. No diseases other than those already found were discovered. Intimate association between pinyon and several species of currant and gooseberry was noted along the canyon road to Poncha Springs but again no blister rust was detected.

Careful study of a pinyon-currant-gooseberry association was made about ten miles northwest of Salina but no fungi besides *Coleosporium* and a mildew of gooseberry were found. The pinyons, however, show considerable injury evidently caused by twig moths and bark beetles. From Sueno Vista to Trout Creek Pass much the same conditions prevail as previously noted, with *Pinus edulis* on hillsides and *Ribes inebrians* and *Grossularia leptantha* as the notable associates. Some unusually fine specimens of the last species were noted as the pass was approached, one symmetrical specimen being at least ten feet across and six to seven feet tall.

The road thru South Park offers absolutely no growth of shrubs and trees, only wide, undulating stretches of open grassland and occasional marshing conditions and alkaline flats.

About thirteen miles west of Florissant, *Pinus flexilis* in intimate association with *R. inebrians* and *Grossularia inermis* was carefully examined but without discovering rust.

About seven miles north of Florissant the tree-flora consists of *Pinus ponderosa*, *Pseudotsuga taxifolia* and *Picea Parryana*, with sparse undergrowth of *Ribes inebrians*. A solitary specimen of *Pinus aristata* was located in this locality the first occurrence of this species met with on the trip. This tree was a thrift young specimen about twelve feet tall and was bearing cones. The nearest occurrence of the species, personally known to the writer, is on the eastern flank of Pikes Peak thirty miles eastward.





At Manitou was found the first occurrence of *Cronartium occidentale*, the Pinyon Blister Rust, on leaves of *Ribes aureum*. The affected bushes were growing in shady moist soil among scrub oaks at foot of a slope where pinyons occur.

Several nurseries and parks were visited in the city and vicinity of Colorado Springs but no English black currants were located and no eastern white pines. *Pinus flexilis* was found in Monument Park together with *Ribes aureum* and a group of seedlings of this species and of *Pinus aristata* in close association was found in the same park. No symptoms of disease could be detected however.

The principal parks of Denver were visited to locate if possible the occurrence of planted specimens of *Pinus strobus*, one specimen only, a fairly thrifty and healthy tree about twelve feet tall, was found in the coniferous planting in the north end of Washington Park. *Ribes aureum* has been freely used in border plantings in this locality but none of the rust was discovered.

The results of the scouting trip may be briefly summarized as follows:

1. None of the white pine blister rust (*Cronartium ribicola*) was found.
2. Only one occurrence of pinyon blister rust (*Cronartium occidentale*) was found, and that at Manitou.
3. Considerable herbarium material of native species of *Ribes* and *Grossularia* has been collected for study and reference.
4. Some plantings of European black currants not previously listed have been located.
5. Pinyon pine appears a poor vehicle for the spread of the white pine blister rust in this state because it so often occurs under conditions that seem especially unfavorable to the occurrence of native species of currants and gooseberries. The present season has been one of unusual heat and dryness in nearly all parts of the state, which may account in some measure for the slight appearance of the pinyon blister rust where its occurrence might otherwise be expected.

B. O. Longyear, Collaborator,  
Fort Collins, Colorado,  
August 24, 1922.



## 8. Scouting in Wyoming

Very little scouting was done in Wyoming during the season of 1922. During part of June Mr. L. N. Goodding inspected wild and cultivated Ribes and pines in the vicinity of Yellowstone Park, and at Wheatland, Glendo, Lost Cabin, Thermopolis and Cody in western Wyoming, but failed to find any evidences of Blister Rust.

## 9. Scouting in British Columbia by U. S. Scouts

In August, 1922, infection was found on cultivated black currants at Revelstoke, British Columbia, and shortly afterward on native white pines in this same locality. This region lies within the belt of white pine which further south forms the large stands of merchantable timber and second growth in eastern Washington, northern Idaho, and western Montana. Thus the disease had a ready and natural means of access into the Inland Empire region. This region had been scouted during the present season by the Montana, Idaho, and eastern Washington scouts, without any trace of the disease being found. It was therefore extremely important to know how far south from Revelstoke the infection extended.

For this purpose, several trained federal scouts were assigned to scouting in eastern British Columbia to supplement the intensive scouting which was immediately started south of the international boundary line. The following table gives the results of this work.

TABLE I.  
Record of Scouting in British Columbia

| District | Days | Men  | Scout-<br>ed | Black<br>Currants<br>Examined | Plants | White Pines Examined | Planted Pines | Native | No. | Per | Total | Total | Total |
|----------|------|------|--------------|-------------------------------|--------|----------------------|---------------|--------|-----|-----|-------|-------|-------|
|          |      |      |              |                               |        |                      |               |        |     |     |       |       |       |
| Yale     | 146  | 1077 |              | 259                           | 22,354 |                      |               |        |     |     |       | 22354 | 0     |
| Kootenay | 158  | 2151 |              | 598                           | 10,842 |                      |               | 5      | 5   |     | 4935  | 15777 | 250   |
| Total    | 304  | 3228 |              | 857                           | 33,196 |                      |               | 5      | 5   |     | 4935  | 38131 | 250   |

This scouting was done intensively and on a very thorough basis. This work, together with the work of the Canadian scouts showed that the disease is not generally prevalent in eastern British Columbia nearer than 100 miles north of the international boundary.



## BOY SCOUTS

Work among Boy Scouts was limited to the organizations in Oregon, Washington, and Idaho. The matter was taken up with Mr. C. H. Warne, Spokane, Washington, Regional Scout Director, for three states. Mr. Warne gave his hearty indorsement of the idea and signed a form letter addressed to all scoutmasters (Exhibit 1). He also supplied a complete list of the scoutmasters and executives for his district (Exhibit 2).

The following line of procedure has been carried out:

1. About June 28th all scoutmasters and executives were sent one copy of Mr. Warne's letter (Exhibit 1), one Bulletin 742, five report blanks (Exhibit 3) and one set of instructions for filling out the report blanks (Exhibit 4), one poster.
2. Some scoutmasters have been interviewed personally.
3. On September 6th a follow-up letter (Exhibit 5 to Washington scouts and Exhibit 6 to Oregon and Idaho scouts) was sent out to all scoutmasters and executives.

### Organization Strength of Boy Scouts

| State      | No. Scoutmasters | No. Scouts |
|------------|------------------|------------|
| Idaho      | 129              | 1935       |
| Oregon     | 87               | 1305       |
| Washington | 125              | 1875       |
| Total      | 341              | 5115       |

### Amount of Distribution of Information

| State      | Ex.1 | Ex.3 | Ex.4 | Ex.5 | Bul.742 | Posters | Replies |
|------------|------|------|------|------|---------|---------|---------|
| Idaho      | 129  | 1935 | 129  | 129  | 129     | 129     | 1       |
| Oregon     | 87   | 1305 | 87   | 87   | 87      | 87      | 1       |
| Washington | 125  | 1875 | 125  | 125  | 125     | 125     | 6       |
| Total      | 341  | 5115 | 341  | 341  | 341     | 341     | 8       |





In the pine regions of Idaho all Boy Scouts' Camps were visited. At these camps the life history and seriousness of the disease were discussed and the boys were shown specimens of the disease on currants, gooseberries and white pine. The following camps were visited: Camp near Howard, Idaho, 65 boys from Latah County, Idaho, and Whitman County, Washington; camp near Coeur d' Alene, Idaho, 50 boys from Shoshone, Kootenai, and Benewah Counties, Idaho; camp near Newport, Washington, 60 boys from Spokane, County, Washington.

While the number of reports has been small, this is not a true criterion of the results obtained. The educational value alone justifies the work. Further personal contact with the scoutmasters and scouts themselves (as well as from other sources) has shown that all the boys have been looking for the disease. Moreover, considerable material probably has been referred to state and Forest Service organizations and consequently has never reached this office for recording. These organizations should be kept informed regarding the progress of the disease.

The following interviews and discussions at Boys' camps have occurred during the season.

By Mr. J. A. Barton.

|         |   |
|---------|---|
| June 5  | Mr. Bovier, Chairman Boy Scouts Committee, Seattle, Washington.   |
| 6       | Mr. Cutines, Scout Executive, Tacoma, Washington.                 |
| 14      | Instruction regarding Blister Rust, 60 boys, Seattle, Washington. |
| 27      | Mr. Brockway, Scout Executive, Portland, Oregon.                  |
| 29      | Mr. Zinger, Scout Executive, Salem, Oregon.                       |
| July 1  | Mr. Brockway, Scout Executive, Portland, Oregon.                  |
| 11      | Mr. Cook, Scoutmaster, Albany, Oregon.                            |
| 12      | Mr. Ginger, Scout Executive, Salem, Oregon.                       |
| Aug. 18 | Mr. Cook, Scoutmaster, Albany, Oregon.                            |

By Mr. F. A. Brown.

|         |  |
|---------|--|
| June 27 | C. K. Warner, Regional Director, Spokane, Washington.  |
| 30      | D. Hawley, Scout Executive, Moscow, Idaho.   |
| July 7  | " " " " " "  |
| 10      | Instruction, boy scout camp, Harvard, Idaho. Sixty boys from Latah County, Idaho and Whitman County, Washington.     |
| 12      | Instruction, boy scout camp, Coeur d' Alene, Idaho. Fifty boys from Shoshone, Kootenai, and Benewah Counties, Idaho. |
| 13      | Instruction, boy scout camp, Sandpoint, Idaho. Forty boys from Bonner and Boundary Counties.                         |
| 13      | A. P. Dayton, Scout Executive, Sandpoint, Idaho.   |
| 14      | Instruction boy scout camp, Diamond Lake, Newport, Washington. Sixty boys from Spokane, County, Washington.          |



Spokane, Washington,  
June 28, 1922.

To the Scoutmasters,  
Boy Scout Troops:

In the discovery of the white pine blister rust in southwestern British Columbia and the northern part of the Puget Sound country of Washington a most serious situation has arisen, which threatens eventually to destroy the white and sugar pine forests of the northwest, if the disease is not checked.

The disease entered our country from Europe about 1906 and has been most destructive to the white pines in the eastern states. By 1917, it had reached Minnesota where the Mississippi quarantine line was established. This quarantine prohibited the movement to any western states from the states east of the Mississippi River of all five-leaved pines and currant or gooseberry plants. Some time prior to that date, unfortunately, it had already passed west; for in 1921 it was discovered north of the international line and in the Puget Sound country as well.

The disease enters through the needles of the pine, the parasitic growth gradually working its way toward the trunk of the tree which it girdles and eventually kills. In the spring, the fungus of the disease produces sacs or blisters filled with dust-like orange colored seed spores, which are blown to leaves of currants and gooseberries. During the summer, orange colored pustules are formed on the under side of these leaves which are the minute seed spores multiplying by thousands and infecting other currants and gooseberries. In the fall, in the final stage, they are blown to the pine trees and begin the work of destruction anew. The disease cannot go from pine tree to pine tree.

Dr. Hoffman of the U. S. Forest Service estimates that there are 63855 million board feet of white and sugar pine in the northwestern part of the United States. This has an economic value to this section of approximately \$1,000,000,000. Of this timber, 40% is owned by the state and federal government. Irrespective of ownership, it is all threatened by the blister rust. Its destruction would affect every individual in these states and the killing of the young trees and reproduction would be a calamity for generations to come.

While the white pine blister rust has been found at several places in the north Puget Sound country, it will not be known whether there are other infections until a thorough survey has been made in Oregon, Washington and Idaho. The United States Department of Agriculture, in cooperation with state and private agencies, is making every effort to locate and control the disease, but there is such a vast territory to cover that they are asking the cooperation this summer of various groups, among which is the Boy Scout Troops.

They wish to know the location of the five-needle pines, such as the white and sugar pine, and the black currants, which is a particularly bad host plant of the disease, and if possible the location of cultivated and wild gooseberries and currants. They are supplying literature descriptive of the blister rust, for reporting the location of these trees and bushes, and instructions for sending in for identification any suspicious diseases that may be observed on the plants.

As such cooperation is in accordance with principles of our organization I have given my endorsement and commend to each troop to cooperate to the fullest extent in observing and locating these plants and trees, to watch for black currants and





and the disease itself, and to report these to the Office of Blister Rust Control, 429 Lyon Building, Seattle, Washington.

Very truly yours,

(s) C. K. Werne,

Regional Scout Executive

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Exhibit 4.

INSTRUCTIONS TO AGENCIES COOPERATING WITH THE DEPARTMENT OF  
AGRICULTURE IN BLISTER RUST SCOUTING

These plans have been prepared to assist the leaders in carrying out the campaign to search for the white pine blister rust in the northwest states. There are enclosed fifteen form reports for distribution among the members. These should be returned to the leaders as soon as they are filled out and forwarded by the leader to the Office of Blister Rust Control, 429 Lyon Bldg., Seattle, Washington.

Posters should be displayed in a place where they can be read and studied by members. Where a camp is maintained in the woods, it would be effective to display a poster at this place. Leaders should explain the serious situation of the blister rust to members of their organizations after carefully reading the pamphlets and literature. It may be desirable to circulate them for more detailed reading by individual members.

Members should be continually alert to discover cultivated black currant bushes, because these are much more effective carriers of the disease than any of the other currants or gooseberries. They should also watch for and report any planted white pine they may find. They should inspect all currants, gooseberries and white pine for the disease and send in specimens of anything that resembles the disease.

The specimens desired are: (a) Leaves and a small portion of the stem of all plantings of cultivated black currants. (b) Specimens of any currants, gooseberries or pines that appear to show indication of disease.

A statement of who collected the specimen, where it was collected and when it was collected, and the name and address of the owner of the plants should be enclosed with the specimen. Specimens with this information enclosed should be tightly and securely wrapped and sent immediately to the Office of Blister Rust Control, 429 Lyon Building, Seattle, Washington.



Send in specimens of any **black** currants and planted **white** pine you may be able to find. Remember that white pine has five needles in a cluster. If you find any diseased currants, gooseberries or white pine, be sure and send in specimens as soon as possible and give your name and address and the name and address of the owner and the exact location of the plants. Hand this report back to your leader as soon as you have put down all the information on the **black** currants and planted **white** pine you can find. DO NOT FAIL TO SEND IN SPECIMENS.



UNITED STATES DEPARTMENT OF AGRICULTURE  
Bureau of Plant Industry

Blister-Rust Control  
429 Lyon Building,  
Seattle, Washington

September 6, 1922.

To the Scoutmasters:

Again I wish to call your attention to the White Pine Blister Rust. This disease, until recently known to occur only in southwestern British Columbia and the northern Puget Sound Region, has been found on black currants at Revelstoke and Beaton, British Columbia, which points are 125 and 110 miles respectively north of the international boundary and which connect directly with the great white pine stands of Washington, Idaho, and Montana. Further, infection just found on the southern boundary of the State of Washington in Pacific County brings the disease about 140 miles nearer the vast sugar pine areas of southern Oregon and California.

Since this is the time of year in which we expect the disease to be most easily found I should like to ask that one more thorough and diligent search be made for it on pines, gooseberries, and currants, especially black currants. And will you then complete the reports on the location of black currants and planted pines sent you some time ago and let us have all information relating to the disease at this office in the very near future?

Very truly yours,

C. H. Stillinger,

Pathologist.





UNITED STATES DEPARTMENT OF AGRICULTURE  
Bureau of Plant Industry

Blister-Rust Control  
429 Lyon Building  
Seattle, Washington.

September 6, 1922.

To the Scoutmasters:

Again I wish to call your attention to the White Pine Blister Rust. This disease, until recently known to occur only in southwestern British Columbia and the northern Puget Sound region has been found on black currants at Revelstoke and Beaton, British Columbia, which points are 125 and 110 miles respectively north of the international boundary and which connect directly with the great white pine stands of Washington, Idaho, and Montana. Further, infection just found on the southern boundary of the State of Washington in Pacific County brings the disease about 140 miles nearer the vast sugar pine areas of southern Oregon and California.

Since this is the time of year in which we expect the disease to be most easily found I should like to ask that one more thorough and diligent search be made for it on pines, gooseberries, and currants, especially black currants. And will you then complete the reports on the location of black currants and planted pines sent you some time ago and let us have all information relating to the disease at this office in the very near future?

We would also like the aid of the scouts in the public school campaign which is to be carried on during the second week of school. The information desired in this campaign is practically the same as that asked of the scouts, and the scouts with their previous experience, can act as leaders among the other children.

Very truly yours,

C. H. Stillinger,

Pathologist.



## GIRL SCOUTS

The work of the Girl Scouts is limited to Oregon and Washington. They are not yet organized in Idaho. The general educational program which was proposed for auxiliary organizations was presented to Miss Catherine Wilkeson, the Northwestern Regional Director of the Girl Scouts, Tacoma, Washington. She very gladly gave her consent to the program and gave her indorsement to a letter (Exhibit I) for distribution to the captains of the Girl Scout troops. She also provided a list of all of the captains and lieutenants of Girl Scout troops in her district (Exhibit II).

Procedure followed: Each troop leader was sent one copy of Miss Wilkeson's letter (Exhibit I), 1 bulletin 742, 1 set of instructions (Exhibit III) and 15 report blanks (Exhibit IV) and 1 poster.

### Summary of Cooperation

| <u>Strength of Organization:</u> |            |          | <u>Literature Distributed</u> |          |           |       |            |        |  |
|----------------------------------|------------|----------|-------------------------------|----------|-----------|-------|------------|--------|--|
|                                  | : Number:  | Exhibit: | Exhibit:                      | Exhibit: | Bulletin: |       | : Reports  |        |  |
| State                            | : Leaders: | Scouts:  | 1                             | : 3      | : 5       | : 742 | : Posters: | Rec'd. |  |
| Washington:                      | 48         | : 720    | : 48                          | : 48     | : 720     | : 48  | : 48       | : 2    |  |
| Oregon                           | : 77       | : 1115   | : 77                          | : 77     | : 1115    | : 77  | : 77       | : 0    |  |
| Total                            | : 125      | : 1835   | : 125                         | : 125    | : 1835    | : 125 | : 125      | : 2    |  |





Tacoma, Washington,  
June 20, 1922.

To the Captains,  
Girl Scout Troops:

In the discovery of the white pine blister rust in southwestern British Columbia and the northern part of the Puget Sound country of Washington a most serious situation has arisen, which threatens eventually to destroy the white and sugar pine forests of the northwest.

The disease entered our country from Europe about 1906 and has been most destructive to the white pines in the eastern states. By 1917 it had reached Minnesota where the Mississippi quarantine line was established. This quarantine prohibited the movement interstate to points outside the quarantined area of five-leaved pines, current or gooseberry plants. Sometime prior to that date, unfortunately, it had probably already passed west; for in 1921 it was discovered north of the international line and in the Puget Sound country as well.

The disease enters through the needles of the pine, the parasitic growth gradually working its way toward the trunk of the tree which it girdles and eventually kills. In the spring the fungus of the disease produces sacs or blisters filled with dust-like orange colored seed spores, which are blown to leaves of currants and gooseberries. During the summer, orange colored pustules are formed on the under side of these leaves which are the minute seed spores multiplying by thousands and infecting other currants and gooseberries. In the fall, in the final stage, they are blown to the pine trees and begin the work of destruction anew. The disease cannot go from pine to pine tree.

Dr. Hofmann of the U. S. Forest Service estimates that there are 63855 millions board feet of white and sugar pine in the northwestern part of the United States. This has an economic value to this section of approximately \$1,000,000,000. Of this timber, 40% is owned by the State and Federal Governments. Irrespective of ownership, it is all threatened by the blister rust. Its destruction would affect every individual in these states and the killing of the young trees and reproduction would be a calamity for generations to come.

While the white pine blister rust has been found at several places in the north Puget Sound country, it will not be known whether there are other infections until a thorough survey has been made of Oregon, Washington, and Idaho. The United States Department of Agriculture, in cooperation with state and private agencies, is making every effort to locate and control the disease, but there is such a vast territory to cover that they are asking the cooperation this summer of various groups, among which is the Girl Scouts.

They wish to know the location of the five-needle pines such as the white and sugar pines and the location of the black currants, which is a particularly bad host plant of the disease, and if possible the location of cultivated and wild gooseberries and currants. They are supplying literature descriptive of the blister rust, form for reporting the location of these trees and bushes, and instructions for sending in for identification any suspicious diseases that may be observed on the plants.

As such cooperation is in accordance with principles of our organization, I



have given my endorsement and commend to each troop to cooperate to the fullest extent in observing and locating these plants and trees, to watch for black currant and the disease itself, and to report these to the Office of the Department of Agriculture, 429 Lyon Building, Seattle, Washington.

Very truly yours,

(s) Catherine Wilkeson,

Northwestern Regional Director.

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Exhibit 3.

INSTRUCTIONS TO AGENCIES COOPERATING WITH THE DEPARTMENT OF  
AGRICULTURE IN BLISTER RUST SCOUTING

These plans have been prepared to assist the leaders in carrying out the campaign to search for the white pine blister rust in the northwest states. There are enclosed fifteen form reports for distribution among the members. These should be returned to the leaders as soon as they are filled out and forwarded by the leader to the Office of Blister Rust Control, 429 Lyon Bldg., Seattle, Washington.

Posters should be displayed in a place where they can be read and studied by members. Where a camp is maintained in the woods, it would be effective to display a poster at this place. Leaders should explain the serious situation of the blister rust to members of their organizations after carefully reading the pamphlets and literature. It may be desirable to circulate them for more detailed reading by individual members.

Members should be continually alert to discover cultivated black currant bushes, because these are much more effective carriers of the disease than any of the other currants or gooseberries. They should also watch for and report any planted white pine they may find. They should inspect all currants, gooseberries and white pine for the disease and send in specimens of anything that resembles the disease.

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A statement of who collected the specimen, where it was collected and when it was collected, and the name and address of the owner of the plants should be enclosed with the specimen. Specimens with this information enclosed should be tightly and securely wrapped and sent immediately to the Office of Blister Rust Control, 429 Lyon Building, Seattle, Washington.



## CAMP FIRE GIRLS

The Camp Fire Girls' Organization is an organization that is very similar to that of the Girl Scouts and Boy Scouts in its activities. The larger part of the organization centers about Seattle, Washington and Portland, Oregon. There are a few troops in other towns in these two states, but the organization is not as yet extensively organized.

The matter of instructing the Camp Fire Girls regarding Blister Rust and securing their cooperation in searching for the disease was taken up with Ruth A. Brown, Executive Secretary for Washington at Seattle, Washington, and Elizabeth J. White, Executive Secretary for Oregon at Portland, Oregon. As a result, it was agreed that Miss Brown and Miss White each would issue a form letter to their respective groups (Exhibits 1 and 2) which would be distributed by their offices to all the "Guardians" in the State of Washington (Exhibit 3) and Oregon (Exhibit 4). With each of these letters was enclosed one Blister Rust Poster, one Bulletin, 742, one set of instructions (Exhibit 5) and 15 report forms (Exhibit 6).

### SUMMARY OF COOPERATION

| <u>Strength of Organization :</u> |           |       |       |       |       |       |         |     |            |         |
|-----------------------------------|-----------|-------|-------|-------|-------|-------|---------|-----|------------|---------|
|                                   | No.       | No.   |       |       |       |       |         |     | Bulletins: | Reports |
| State                             | Guardians | Girls | Ex. 1 | Ex. 2 | Ex. 5 | Ex. 6 | Posters | 742 | Rec'd.     |         |
| Washington:                       | 223       | 1345  | 223   |       | 223   | 5345  | 223     | 223 |            | 1       |
| Oregon                            | 53        | 795   |       | 53    | 53    | 795   | 53      | 53  |            | 1       |
| Total                             | 276       | 4140  | 223   | 53    | 276   | 4140  | 276     | 276 |            | 2       |





Seattle, Washington,  
June 20, 1922.

To the Guardians,  
Camp Fire Girls:

In the discovery of the white pine blister rust in southwestern British Columbia and the northern part of the Puget Sound country of Washington a most serious situation has arisen, which threatens eventually to destroy the white and sugar pine forests of the northwest.

The disease entered our country from Europe about 1906 and has been most destructive to the white pines in the eastern states. By 1917, it had reached Minnesota where the Mississippi quarantine line was established. This quarantine prohibited the movement interstate to points outside the quarantined area of five-leaved pines, currant and gooseberry plants. Some time prior to that date, unfortunately, it had probably already passed west; for in 1921 it was discovered north of the international line and in the Puget Sound country as well.

The disease enters through the needles of the pine, the parasitic growth gradually working its way toward the trunk of the tree which it girdles and eventually kills. In the spring, the fungus of the disease produces sacs or blisters filled with dust like orange seed spores, which are blown to leaves of currants and gooseberries. During the summer orange colored pustules are formed on the under side of these leaves which are the minute seed spores multiplying by thousands and infecting other currants and gooseberries. In the fall, in the final stage, they are blown to the pine trees and begin the work of destruction anew. The disease cannot go from pine to pine.

Dr. Hofmann of the U. S. Forest Service estimates that there are 63855 million board feet of white and sugar pine in the northwestern part of the United States. This has an economic value to this section of approximately \$1,000,000,000. Of this timber, 40% is owned by the State and Federal Government. Irrespective of ownership, it is all threatened by the blister rust. Its destruction would affect every individual in these states and the killing of the young trees and reproduction would be a calamity for generations to come.

While the white pine blister rust has been found at several places in the north Puget Sound Country, it will not be known whether there are other infections until a thorough survey has been made of Oregon, Washington and Idaho. The United States Department of Agriculture, in cooperation with state and private agencies, is making every effort to locate and control the disease, but there is such a vast territory to cover that they are asking the cooperation this summer of various groups, among which is the Camp Fire Girls.

They wish to know the location of the five-needle pines, such as the white and sugar pine, and the black currants, which is a particularly bad host plant of the disease, and if possible the location of cultivated and wild gooseberries and currants. They are supplying literature descriptive of the blister rust, form for reporting the location of these trees and bushes, and instructions for sending in for identification any suspicious disease they may observe on the plants.



As such cooperation is in accordance with the principles of our organization, I have given my endorsement and commend to each camp to cooperate to the fullest extent in observing and locating these plants and trees, to watch for black currant and the disease itself, and to report these to the Office of the Department of Agriculture, 429 Lyon Building, Seattle, Washington.

Very truly yours,

(s) Ruth A. Brown,

Executive Secretary.

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Exhibit 2: A letter, the same as the foregoing, sent out from Portland, Oregon, to the Guardians of the Camp Fire Girls of Oregon, and signed by Elizabeth J. White, Executive Secretary.

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Exhibit 5

INSTRUCTIONS TO AGENCIES COOPERATING WITH THE DEPARTMENT OF  
AGRICULTURE IN BLISTER RUST SCOUTING

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The specimens desired are: (a) Leaves and a small portion of the stem of all plantings of cultivated black currants. (b) Specimens of any currants, gooseberries or pines that appear to show indication of disease.

A statement of who collected the specimen, where it was collected and when it was collected, and the name and address of the owner of the plants should be enclosed with the specimen. Specimens with this information enclosed should be tightly and securely wrapped and sent immediately to the Office of Blister Rust Control, 429 Lyon Building, Seattle, Washington





REPORT OF LOCATION OF BLACK CURRANTS AND PLANTED WHITE PINE AND  
DISEASED CURRANTS, GOOSEBERRIES AND WHITE PINE

BY AGENCIES COOPERATING WITH THE OFFICE OF BLISTER RUST CONTROL,  
U. S. DEPARTMENT OF AGRICULTURE

429 Lyon Building, Seattle, Washington

Name of Person Making Report.....Date.....  
Street Number.....Town.....State.....  
Organization to which you belong.....Unit.....  
Name of Leader.....

| OWNER'S NAME              | LOCATION   |    | NUMBER OF PLANTS<br>IN PLANTING | IS PLANT DIS-<br>EASED? | Send in specimen |
|---------------------------|--|----|---------------------------------|-------------------------|------------------|
|                           | In towns, give street number.<br>country or woods, give location as:<br>close as possible to known points: | In |                                 |                         |                  |
| Cultivated Black Currents | :  | :  | :                               | :                       | :                |
|                           | :  | :  | :                               | :                       | :                |
|                           | :  | :  | :                               | :                       | :                |
|                           | :  | :  | :                               | :                       | :                |
|                           | :  | :  | :                               | :                       | :                |
|                           | :  | :  | :                               | :                       | :                |
|                           | :  | :  | :                               | :                       | :                |
|                           | :  | :  | :                               | :                       | :                |
|                           | :  | :  | :                               | :                       | :                |
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| Planted White Pine        | :  | :  | :                               | :                       | :                |
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|                           | (Use other side of report if necessary)  |    |                                 |                         | :                |

Send in specimens of any black currants and planted white pine you may be able to find. Remember that white pine has five needles in a cluster. If you find any diseased currants, gooseberries or white pine, be sure and send in specimens as soon as possible and give your name and address and the name and address of the owner and the exact location of the plants. Hand this report back to your leader as soon as you have put down all the information on the black currants and planted white pine you can find. DO NOT FAIL TO SEND IN SPECIMENS.



# LUMBERMEN

During the course of the summer mailing lists of lumbermen have been compiled from a great many sources so that it is probable that there is on file the names and addresses of the great majority of the lumbermen in Oregon, Washington, Idaho, Montana, and California. This list includes not only white and sugar pine lumbermen, but all parties or corporations interested in the lumber industry in these states.

Through circular letters and literature an effort has been made to make the lumbermen familiar with the disease, obtain their interest and active cooperation in the work and finally to keep their interest aroused and develop their cooperation into an active agency. The following table gives a summary of this work:

## Literature Distributed to Lumbermen

| State                   | No. :<br>Lumber-<br>men | Posters: :<br>and :<br>Ex. 1 | Posters: :<br>and :<br>Ex. 2 | Posters: :<br>and :<br>Ex. 3 | Posters: :<br>and :<br>Ex. 4 | Posters: :<br>Posters: | Total: :<br>Bul.: Total |
|-------------------------|-------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------|-------------------------|
| California:             | 301                     | 0                            | 2                            | 0                            | 0                            | 75                     | 769 : 77                |
| Idaho                   | 386                     | 21                           | 36                           | 329                          | 0                            | 0                      | 329 : 386               |
| Montana                 | 273                     | 11                           | 26                           | 236                          | 0                            | 0                      | 313 : 273               |
| Oregon                  | 1053                    | 2                            | 142                          | 909                          | 0                            | 0                      | 909 : 1053              |
| Washington:             | 971                     | 20                           | 171                          | 0                            | 780                          | 0                      | 780 : 971               |
| Total                   | 2984                    | 54                           | 377                          | 1474                         | 780                          | 75                     | 2605 : 2760             |
| Date of<br>Distribution |                         | June 20:                     | Aug. 5:                      | Sept. 4:                     | Sept. 4:                     | July 1:                | Oct. 1:                 |



UNITED STATES DEPARTMENT OF AGRICULTURE  
Bureau of Plant Industry

429 Lyon Building,  
Seattle, Washington,  
July 20th, 1922.

To Timber Owners:

This office has received a request from the U. S. Forest Service at Missoula, Montana that you receive information regarding the White Pine Blister Rust. As a result I am enclosing for your information some circulars regarding the White Pine Blister Rust. This is a very serious disease of the white pines. It is beyond eradication in the eastern white pine areas. It has just been found in British Columbia and the Puget Sound region of Washington.

Every effort will be made to stamp out the disease where it now exists. It is imperative that everyone become as familiar with the disease as possible, watch for it and report any probable infected areas so that they may be investigated and the disease eradicated before it has become widely distributed. Currants and gooseberries, both wild and cultivated, and especially the English black currant together with white and sugar pines should be inspected for the disease. Examine these wherever they are found and report anything which resembles the disease. Send in specimens of what you report.

The English black currant is the most serious carrier of the disease. The disease generally centers around a planting of black currants. Every effort is being made to locate and inspect this variety of currant wherever it occurs. Watch for these plants, inspect them and report all plantings that you observe. Plantings are being found in our white pine forests on isolated and deserted farms and in old mining towns. During your work you can help be getting this information wherever you go.

The posters should be posted in a conspicuous place and the attention of all of your associates called to the disease. All reports regarding the presence of the disease, specimens of diseased material, plantings of black currants and currant and gooseberry specimens as well as requests for information should be sent to the Office of Blister Rust Control, 429 Lyon Building, Seattle, Washington.

Very truly yours,

Assistant Pathologist.

Enclosures.





UNITED STATES DEPARTMENT OF AGRICULTURE  
Bureau of Plant Industry

Blister-Rust Control  
429 Lyon Building,  
Seattle, Washington.

To Timber Owners -

I am enclosing for your information a poster regarding the White Pine Blister Rust. This is a very serious disease of the white pines. It is beyond eradication in the eastern white pine areas. It has just been found in British Columbia and the Puget Sound region of Washington.

Every effort will be made to stamp out the disease where it now exists. It is imperative that everyone become as familiar with the disease as possible, watch for it and report any probable infected areas so that they may be investigated and the disease eradicated before it has become widely distributed. Currants and gooseberries, both wild and cultivated, and especially the cultivated English black currant as well as native and planted white and sugar pines should be inspected for the disease. Examine these wherever they are found and report anything which resembles the disease. Send in specimens of what you report.

The English black currant is the most serious carrier of the disease, consequently every effort should be made to discourage the planting of this variety of currant. During your work you can help by reporting and plantings of this variety that may come to your attention and by urging the owners of the plants to destroy them, since, due to this disease, they constitute a constant menace to our native white pines.

The posters should be posted in a conspicuous place and the attention of all of your associates called to the disease. All reports regarding the presence of the disease, specimens of diseased material, plantings of black currants and currant and gooseberry specimens as well as requests for information should be sent to the Office of Blister Rust Control, 429 Lyon Bldg., Seattle, Washington.

Very truly yours,

C. A. Stillinger,

Pathologist.

Enclosures.



UNITED STATES DEPARTMENT OF AGRICULTURE  
Bureau of Plant Industry

Blister-Rust Control  
429 Lyon Building,  
Seattle, Washington.

September 4th, 1922.

Dear Sir:

I wish to report what has recently been learned concerning the white pine blister rust in the Pacific Coast regions and urge your further assistance in preventing this disease becoming a serious menace to our western white and sugar pine forests.

This destructive disease of the white pines was found for the first time in western North America late last fall when it was discovered at several points in southwestern British Columbia and northwestern Washington. Extensive scouting by the Canadian authorities during the present season shows that this disease is well established in British Columbia west of the Cascade Mountains and that it has already caused serious damage to the pines which have been infected for several years. Similar scouting by state and federal men indicates that it is rapidly spreading southward through western Washington.

Until recently it was believed that the disease had not spread to points east of the Cascades. However, last week it was found on cultivated English black currants and native white pines in the vicinity of Revelstoke and Beaton, B. C. These points are only about one hundred miles north of the international boundary and are in the northern edge of the great western white pine area which extends into Washington, Idaho, and Montana. It is now evident that the disease is spreading rapidly and unless hurriedly checked it will in a short while be established in the Inland Empire white pine stands. The disease has also recently been found on English black currants in the southwestern corner of Pacific County, Washington. This indicates a rapid southern spread along the coast region and directly threatens the sugar pine stands of Oregon and California.

In order to check the spread of the blister rust it is necessary to determine the extent of its present distribution immediately. At this season of the year it is most easily detected on the leaves of currant and gooseberry bushes. The English black currant is most susceptible and if carefully inspected now would very likely show the disease if it is present in the locality. You can help a great deal by examining the leaves of the currants and gooseberries in your locality, especially the English black currant leaves, and sending specimens of suspicious material to the state experiment station or to this office for identification.

During the second week of school this fall, school children are being asked to devote some time to looking for the disease. You may be able to help make this auxiliary scouting effective by giving the subject publicity in your local newspapers and by urging the local school authorities to make the campaign as thorough as practicable. In this way you can help very materially in our fight to protect the western white pine forests from a very serious pest. We will greatly appreciate your energetic efforts in this matter.





In case you have not already received adequate information concerning the blister rust and its destructiveness in other pine regions advise me and I will send you bulletins and illustrations.

Very truly yours,

C. R. Stillinger,

Pathologist.

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Exhibit 4.

UNITED STATES DEPARTMENT OF AGRICULTURE  
Bureau of Plant Industry

Blister-Rust Control  
429 Lyon Building,  
Seattle, Washington.

September 14th, 1922.

Dear Sir:

I wish to report what has recently been learned concerning the white pine blister rust in the Pacific Coast regions and ask you further assistance in preventing this disease becoming a serious menace to our western white and sugar pine forests.

This destructive disease of the white pines was found for the first time in western North America late last fall when it was discovered at several points in southwestern British Columbia and northwestern Washington. Extensive scouting by the Canadian authorities during the present season shows that this disease is well established in British Columbia west of the Cascade Mountains and that it has already caused serious damage to the pines which have been infected for several years. Similar scouting by state and federal men indicates that it is rapidly spreading southward through western Washington.

Until recently it was believed that the disease had not spread to points east of the Cascades. However, last week it was found on cultivated English black currants and native white pines in the vicinity of Revelstoke and Seaton, B. C. These points are only about one hundred miles north of the international boundary and are in the northern edge of the great western white pine area which extends into Washington, Idaho and Montana. It is now evident that the disease is spreading rapidly and unless hurriedly checked it will in a short while be established in the Inland Empire white pine stands. The disease has also recently been found on English black currants in the southwestern corner of Pacific County, Washington. This indicates rapid southern spread along the coast region and directly threatens the sugar pine stands of Oregon and California.

In order to check the spread of the blister rust it is necessary to determine the extent of its present distribution immediately. At this season of the year



it is most easily detected on the leaves of current and gooseberry bushes. The English black current is most susceptible and if carefully inspected now would very likely show the disease if it is present in the locality. You can help a great deal by examining the leaves of the currants and gooseberries in your locality, especially the English black current leaves, and sending specimens of suspicious material to the State Supervisor of Forestry, Olympia, Washington or direct to this office for identification.

The fire hazard for the season having passed you will probably be able to devote more time to the blister rust scouting. Your full cooperation in combating this destructive pest will be greatly appreciated by all concerned.

For your information I am enclosing a copy of circular No. 226. In case you need additional information concerning the blister rust and its destructiveness in other pine regions, advise me.

Very truly yours,

C. R. Stillinger,

Pathologist.



REPORT OF LOCATION OF BLACK CURRENTS AND PLANTED WHITE PINE AND  
DISEASED CURRENTS, GOOSEBERRIES AND WHITE PINE

BY AGENCIES COOPERATING WITH THE OFFICE OF BLISTER RUST CONTROL,  
U. S. DEPARTMENT OF AGRICULTURE

429 Lyon Building, Seattle, Washington

Name of Person Making Report.....Date.....  
Street Number.....Town.....State.....  
Organization to which you belong.....Unit.....  
Name of Leader.....

| OWNER'S NAME                            | LOCATION  |     | NUMBER OF PLANTS<br>IN PLANTING | IS PLANT DIS-<br>EASED?<br>Send in specimen |
|---|---|-----|---------------------------------|---|
|   | In towns, give street number.<br>country or woods, give location as<br>close as possible to known points: | In: |                                 |   |
| Cultivated Black Currents               | :   | :   | :                               | :   |
|   | :   | :   | :                               | :   |
|   | :   | :   | :                               | :   |
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| Planted White Pine                      | :   | :   | :                               | :   |
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| (Use other side of report if necessary) |   |     |                                 | :   |

Send in specimens of any black currents and planted white pine you may be able to find. Remember that white pine has five needles in a cluster. If you find any diseased currents, gooseberries or white pine, be sure and send in specimens as soon as possible and give your name and address and the name and address of the owner and the exact location of the plants. Hand this report back to your leader as soon as you have put down all the information on the black currents and planted white pine you can find. DO NOT FAIL TO SEND IN SPECIMENS.





COOPERATIVE BLISTER RUST CONTROL WORK IN DISTRICT I OF U. S. FOREST SERVICE

District I of the Forest Service consists of those national forests in Montana, northern Idaho, northeastern Washington and northwestern South Dakota. The District office is located at Missoula, Montana.

Early in June the matter of blister rust cooperative work in District I was discussed with the district forester. At that time the same program as that which had been agreed upon with District 6 of the Forest Service was recommended to District I. The program consisted of the following points:

1. That the Office of Blister Rust Control at Seattle, Washington should supply literature and specimens for the information of all Forest Officers in the district so that they might become as familiar with the disease as possible.
2. That the Forest Officers should consider it as a part of their summer's work to accomplish and report upon at the end of the season the following lines of information:
  - A. Look for the disease on both wild and cultivated currants and gooseberries as well as on planted and native white pine and report any suspicious material to the Office of Blister Rust Control, Seattle, Washington.
  - B. That Forest Officers should examine all plantings of currants, and gooseberries in their forests and should make an accurate record of any black currants that were found. Further they should urge the owners of black currants to destroy them.
  - C. That Forest Officers should divide up their forests into districts and make a study of the species, abundance and distribution of all wild Ribes and white pine both commercial and botanical distribution, mapping the same. The species of wild Ribes were to be determined by a member of the Office of Blister Rust Control, Seattle, Washington.

The program finally decided upon by the District Forest Office is outlined in a letter, Exhibit 1, that was issued to Forest Officers of those forests which have commercial stands of white pine. The results of the summer scouting by the Forest Officers of District I will be reported by the District Forester.

The District Office has cooperated with the Office of Blister Rust Control in the school campaign which has been carried on in Montana by providing paper and mimeographing 7500 letters which were sent to the teachers of Montana during the school campaign.



In the table given below is shown, according to the forests in District I, the literature and blister rust specimens that have been distributed to Forest Officers of District I and the date of distribution. Circular letters are referred to as exhibits (Ex.) copies of which are attached to this report.

|  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
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RS  
Pd, D-I  
White Pine Blister Rust

June 30, 1922

Forest Officer - North Idaho and Western Montana.

You will receive soon circulars, posters and colored pictures from the Bureau of Plant Industry that will give you information about the white pine blister rust. This disease probably has not reached District I, but it has obtained a permanent foothold in British Columbia. The disease is so serious that should it get a good start in north Idaho, it would probably mean that foresters would have to give up white pine.

The Bureau of Plant Industry is handling the problem and have out some scouts in Idaho and western Montana. But the territory is large and they need our help. As you travel about this summer you are urged to go and observe the following things:

1. If you see any currant or gooseberry leaves or white pines that you suspect may be infected, collect specimens and ship to the Office of Blister Rust Control, 429 Lyon Building, Seattle, Washington.
2. Look for the cultivated black currant, at nurseries and in gardens and especially where there are or have been Scotch or English families. Keep an accurate record of where this currant is found and where not. When you find bushes persuade the owners to destroy them if you can without arousing any feeling of antagonism.
3. Keep a close lookout for and record of any planted white pines from other than Forest Service nurseries. It is very important to have record of all isolated or outlying trees or small stands of white pine.
4. Familiarize yourself with all the species of currants and gooseberries (Genus Ribes). Begin to note down where found, abundance, and general distribution. The collection and identification of Ribes species would be a good thing. Specimens may be sent to the Office of Blister Rust Control at Seattle for identification. This information may be of vital importance within a very few years.

Very truly yours,

Fred Morrell, District Forester.

By L. C. Stockdale.



## COOPERATIVE EDUCATIONAL WORK IN FOREST SERVICE

### District 6.

District 6 is a combination of all of the National Forests in Alaska, Oregon and Washington excepting the northeastern corner. Since the blister rust occurs in this district more extensive efforts have been made to instruct the men in this district regarding the appearance and life history of the disease than in the other forest districts.

On June first a conference was held at the district office at Portland, Oregon at which Mr. Cecil, Dr. Boyce and Mr. Stillinger were present. At this meeting the following program was decided upon.

#### MEMORANDUM of Understanding between Mr. Cecil and Mr. Stillinger regarding Blister Rust Cooperation -

1. Mr. Cecil will send out circular letters to Forest Supervisors, copy of form and instructions.
2. Miss Wertz, from the answers to above letters, will compile mailing list.
3. Forest Service will mimeograph enough of letters to Forest Officers, form report and circular of instructions to supply above mailing list.
4. Miss Wertz will forward mailing list secured under No. 2 and supplies under No. 3 to C. R. Stillinger, 429 Lyon Building, Seattle, Washington.
5. Mr. Stillinger to forward letter in No. 3 with colored poster and circular to the addresses given in No. 2.
6. Mr. Wyckoff will determine the species of all specimens and make prompt report. He will supply the District herbarium with a set of wild currants and gooseberries found in District 6.
7. Forest Officers will submit their reports to District Forester at end of season. The reports are to be available for examination, study, and compilation by members of Blister Rust Office.
8. District Forester will notify the Blister Rust Office of all meetings when subject of Blister Rust may be presented to advantage.

In compliance with article 1 in this understanding the District office at Portland, Oregon on June 5 sent out a circular letter (Exhibit 1) to all forest supervisors in the district.



In accordance with article 2, 3, 4, and 5, on June 30, a circular letter (Exhibit 4) together with a list of the supervisors and the number of men in their district was received by the Office of Blister Rust Control at Seattle. On July 1, copies of these letters together with a poster to supply all the forest officers in each particular forest were forwarded to each supervisor.

Due to the lateness of the season, it was decided that the program outlined in the letter of June 5 should be limited to those forests nearest the disease and should be extended to other forests next season.

Consequently on July 29 a letter to Forest Officers (Exhibit 2) together with outline forms and instructions (Exhibit 3) of what was to be actually done in each forest and reported upon at the end of the season was sent to all forest officers in the Olympic, Washington, Wenatchee, Snoqualmie, Chelan and Colville Forests. It is expected that at the end of the season the forest officers in these forests will make the proper reports.

During the summer Mr. Wyckoff has made determinations of all Ripes that have been sent in and reported his determinations to the forest officer who has sent in reports.

During July and August Mr. A. J. Seltzer and Mr. S. A. Barton, both from this office, have spent part of their time in the field instructing forest officers regarding the appearance, life history, seriousness of the disease, how to look for the disease, how to recognize the wild currants and gooseberries as well as explaining to them the general program that the forest officers were expected to follow out and report upon at the end of the season. These men have not been able to meet all of the forest service men. Those with whom they have held conferences are listed according to the forests in which they are located.

The following conferences have been held with U. S. Forest Service men in District 6.

George H. Cecil, District Forester  
C. J. Buck, Assistant District Forester  
E. F. Kavanagh, " " "  
Geo. A. Bright, Cruiser

#### Cascade National Forest

Mr. H. E. Vincent, Deputy Supervisor  
Mr. N. P. McDuff, Forest Supervisor  
Mr. King  
Mr. Bright,  
Mr. E. Parks  
Mr. Blodget

#### Crater National Forest

H. B. Rankin, Forest Supervisor  
H. M. Johnson, Forest Examiner  
Mr. Peachy  
Lookout on Mt. Wagoner





Deschutes National Forest

Mr. Horton, Grazing Examiner

Olympic National Forest

O. F. Erickson  
Mr. Loomis  
Joseph N. Fulton  
R. A. Milligoss  
D. G. Kartsuck

Oregon National Forest

T. H. Sherrard, Supervisor  
Mr. Gibson, Forest Ranger  
Mr. A. Weisendanger, Forest Ranger  
Mr. M. F. Brown, Forest Ranger  
Mr. Rhodes  
Mr. Edwards

Rainier National Forest

E. J. Penby  
George E. Griffith  
John Kirkpatrick  
Jules Hagon  
Howard Schultz  
Mr. Smith

Santiam National Forest

Mr. C. C. Hall, Forest Supervisor  
Mr. Stedman, Forest Ranger  
Mr. Elliott, " "  
Mr. Brown, " "  
Mr. Knox, " "

Siskiyou National Forest

Mr. Macdoniels, Forest Supervisor  
Mr. Wiskler  
Mr. Slubbey

Siuslaw National Forest

R. S. Shelley, Supervisor  
Mr. Stevenson  
Mr. Kerby  
Mr. Goewood  
A. H. Wilcox, Forest Examiner  
Mr. Knox



Shoquah National Forest

W. B. Weigle, Forest Supervisor  
Lewis A. Treen, Jr.  
A. L. Morgrein  
H. L. Tusler  
George Piles  
Mr. Noble

Unaqua National Forest

L. Porrit, Forest Examiner  
C. B. Neal, Forest Supervisor  
W. H. Leve, Forest Examiner

Washington National Forest

R. L. Campbell  
G. C. Burch  
C. H. Park, Forest Supervisor  
Thomas Thompson





In the table given below is shown, according to the forests in the district, the literature and blister rust specimens that have been distributed to the forest officers and the date of distribution as well as the number of interviews that have been held. The different letters which have been sent out are referred to as exhibits (Ex.) copies of which are attached to this report.

| Forest     | Ex.1    | Poster  | Ex. 2    | Ex. 3   | Blister Rust | Specimens | Ex.4     | Bul. | Inter- |
|------------|---------|---------|----------|---------|--------------|-----------|----------|------|--------|
|            |         |         |          |         | Albes        | Pine      |          | 226  | views  |
| Cascade    | 1       | 6       |          |         | 1            | 1         | 6        | 6    | 6      |
| Chelan     | 1       | 9       | 9        |         | 7            | 1         | 9        | 9    |        |
| Columbia   | 1       | 8       |          |         | 1            | 1         | 8        | 8    |        |
| Colville   | 1       | 6       | 6        |         | 7            | 1         | 6        | 6    |        |
| Crater     | 1       | 40      |          |         | 1            | 1         | 40       | 40   | 4      |
| Deschutes  | 1       | 10      |          |         | 1            | 1         | 10       | 10   | 1      |
| Fremont    | 1       | 8       |          |         | 1            | 1         | 8        | 8    |        |
| Malheur    | 1       | 7       |          |         | 1            | 1         | 7        | 7    |        |
| Ochoco     | 1       | 8       |          |         | 1            | 1         | 8        | 8    |        |
| Olympic    | 1       | 25      | 25       |         | 7            | 1         | 25       | 25   | 5      |
| Oregon     | 1       | 14      |          |         | 1            | 1         | 14       | 14   | 6      |
| Rainier    | 1       | 10      |          |         | 1            | 1         | 10       | 10   | 6      |
| Santiam    | 1       | 5       |          |         | 1            | 1         | 5        | 5    | 5      |
| Siskiyou   | 1       | 6       |          |         | 1            | 1         | 8        | 8    | 3      |
| Siuslow    | 1       | 6       |          |         | 1            | 1         | 6        | 6    | 6      |
| Snoqualmie | 1       | 11      | 11       |         | 7            | 1         | 11       | 11   | 7      |
| Umatilla   | 1       | 12      |          |         | 1            | 1         | 12       | 12   |        |
| Umpqua     | 1       | 9       |          |         | 1            | 1         | 9        | 9    | 3      |
| Wallowa    | 1       | 8       |          |         | 1            | 1         | 8        | 8    |        |
| Washington | 1       | 5       | 5        |         | 7            | 1         | 5        | 5    | 4      |
| Wenatchee  | 1       | 12      | 12       |         | 7            | 1         | 12       | 12   |        |
| Whitman    | 1       | 29      |          |         | 1            | 1         | 29       | 29   |        |
| Total      | 22      | 256     | 78       |         | 56           | 22        | 256      | 256  | 56     |
| Date Dis-  |         |         |          |         | July 3:      |           |          |      |        |
| tributed   | June 5: | July 1: | July 29: | Aug. 8: | July 24:     | July 1:   | Oct. 17: |      |        |



UNITED STATES DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
NORTH PACIFIC DISTRICT

Address Reply to  
District Forester  
and refer to

Post Office Building  
Portland, Oregon

RS  
Pd, White Pine Blister Rust

June 5, 1922.

Forest Supervisor,

Dear Sir:

You will shortly receive for your information circulars regarding the white pine blister rust. This is a very serious disease of the white pines. It is beyond eradication in the eastern white pine areas. It has just been found in British Columbia and the Puget Sound region of Washington, where every effort must be made to stamp it out. To this end the Office of Blister Rust Control has established headquarters at Seattle to work in conjunction with state, federal and private agencies for the eradication of the disease. It is imperative that everyone in the woods become as familiar with the disease as possible, watch for it, and report any probable infested areas so that they may be investigated and the disease eradicated before it has become widely distributed. Currants and gooseberries, both wild and cultivated, and especially the English black currant, together with white and sugar pines, should be inspected for the disease.

The Forest Service as the owner of large areas of white and sugar pine is vitally interested in the control of the disease and every step must be taken to cooperate with the Office of Blister Rust Control. It is proposed, therefore, for you to divide your Forest into areas which should include not only the National Forest Lands, but patented lands within and adjacent to the Forest. Your attention should be given to the cultivated varieties of gooseberries and currants grown by the small ranchers and farmers in their gardens. There are many wild currants and gooseberries in our western woods. All are capable of taking the disease but some are much better carriers than others. It is very important that the range of distribution and abundance of all of the wild species of currants and gooseberries in the West be determined this summer. All Forest officers will be expected to aid in getting this information by collecting specimens in fruit or flower and sending them in. Notes regarding the abundance, distribution of the different species, and the presence or absence of white pine in the particular locality where a species grows will be very valuable information.

All Forest officers must consider it as part of their summer's work inspecting for the disease and securing information regarding the distribution of wild currants and gooseberries, as well as white pine. They will be expected to make a report on their observations at the end of the season. If the collector desires, a report on the identification of the



species will be sent after the material has been examined. You are urged to supply specimens and as much of this information as possible. I should also be glad to have you send me a map showing the division of your Forest into units for this work, and the name of the man who will be held responsible for each unit, in order the circulars and posters may be sent them.

All men receiving posters are expected to post them in conspicuous places around their headquarters and call attention to the disease. All reports regarding the presence of the disease, specimens of diseased material, plantings of black currants and current and gooseberry specimens, as well as requests for information should be sent to the Office of Blister Rust Control, 429 Lyon Building, Seattle, Washington.

Very truly yours,

Geo. H. Cecil,

District Forester.

Exhibit 2.

The following letter was sent to Forest Officers from the Forest Service, Portland, Oregon, July 29, 1922.

Dear Sir:

Referring to circular letter of June 30:

The greatest danger at the present time of the spread of the white pine blister rust is on the Forests bordering the international boundary, and for this reason it is necessary for the Forest officers on the Olympic, Washington, Wenatchee, Snoqualmie, Chelan, and Colville Forests to make more intensive observations as to the presence of shrubs and tree species likely to be infected. The desired data is shown on the forms already sent you, and officers of the Bureau of Plant Industry will visit the Supervisors of the above Forests to explain what is desired. All Forest officers on these Forests will be expected to make a report on this summer's observations at the end of the season.

Very truly yours,

Fred Ames,

Assistant District Forester.





OUTLINE OF FORM

1. Each officer to submit a map of his district showing the distribution of white pine.  
 So far as practicable the map should separate the range of the species into areas of approximately equal distribution, which areas should be described in accordance with the form.
2. On same map if possible indicate the location of the wild currents and gooseberries.
3. Kinds of currents and gooseberries may be indicated in either of two ways:
  - A. Indicate the kinds of currents or gooseberries on the map by a number and submit specimens for that number so that the species can be determined at the end of the season.  
 Or
  - B. Send to Seattle office specimens with a number. Forest Officer would keep duplicate specimens. Prompt determinations will be sent back by Blister Trust Office at Seattle and then the kinds of currents and gooseberries may be indicated with different colors on the map.
4. Instructions for filling out form report:
  - A. Native White Pine
    - a. Location - Indicate by number of area as shown on map.
    - b. Species - Indicate whether western white pine, white barked pine or sugar pine.
    - c. Trees per acre - Approximate for trees over 12" D.B.H.
    - d. State whether abundant or scattered.
  - B. Wild Currents and Gooseberries
    - a. Species - Indicate by number if species is not known and submit specimens bearing a similar number.
    - b. Locality - Bottomland, lower slope, upper slope, Alpine, Exposure, Elevation.
    - c. Forest Conditions - Timbered, burn, brush land, etc.
    - d. Abundance - Describe in relative terms as abundant, scattered, rare.



- e. Tree association - Indicate whether currants and gooseberries are growing with any white pine and note other tree species.

C. Cultivated Currants and Gooseberries Inspected.

- a. Location - Give owner and address if possible, otherwise indicate location of plants if area is covered in your map. Otherwise indicate location so that plants may be found later.
- b. Indicate the number of plants in the planting and determine if possible whether any of the currants are of the black variety.
- c. If diseased with blister rust - if anything of a suspicious nature is found, send in specimens to Blister Rust Control Office, 429 Lyon Building, Seattle, Washington.





FORM REPORT FOR WOLFE OFFICIALS CONTAINING MISTAKES NOT TO BE SUBMITTED WITH ME.

|                                       |   |   |                                |   |   |   |
|---------------------------------------|---|---|--------------------------------|---|---|---|
| Native White Pine                     | : | : | Wild Currents and Gooseberries | : | : | Cultivated Currents (Cu.),                          |
| :                                     | : | : | :                              | : | : | Gooseberries (Gb.), Black Currents                  |
| :                                     | : | : | :                              | : | : | (Blk.Cu.) and White Pine (W.P.)                     |
| Location: Species: per : acre:-tion : | : | : | Forest: :                      | : | : | Tree : : Location : Cu. : Gb. : Blk.:W.P.: Diseased |
| :                                     | : | : | :                              | : | : | :   |



The following letter was sent to Forest Officers from the Forest Service, Portland, Oregon, June 30, 1922.

Dear Sir:

You will shortly receive from the Western Office, White Pine Blister Rust Control, of Seattle, pamphlets and other information dealing with white pine blister rust, a very serious disease of the five-needle pines. This disease has been found in British Columbia and the Puget Sound region of Washington, and possibly may extend to other portions of the Northwest.

Special attention other than that provided for in this letter is contemplated on the Forests bordering the Canadian line and in the Puget Sound region; however, it is desired that all Forest officers in the District familiarize themselves with the information contained in the pamphlets, so as to be able to advise this office as to the location and quantity of any of the five-needle pines on their district as well as of any indications of infection by blister rust. It is imperative that everyone in the woods become as familiar with the disease as possible, watch for it, and report any probable infected areas so that they may be investigated and the disease eradicated before it has become widely distributed.

As indicated in the pamphlets which are being sent you, the disease is carried by wild currants and gooseberries. All species of these two shrubs are capable of taking the disease, but some are much better carriers than others. An effort is to be made to determine the range or distribution and abundance of all of the wild species of currants and gooseberries in the West this summer. All Forest officers can aid greatly in getting this information by collecting specimens in fruit or flower and sending them in for identification. The specimens should be accompanied by notes regarding the abundance and distribution of the different species and presence or absence of the five-needle pines in the particular locality where the species of currants or gooseberries grow. If the collector desires a report on the identification of the species will be sent after the material has been examined. You are urged to supply specimens and as much of this information as possible.

It is suggested that the simplest way to record location within your district of the pines affected by the disease or the currants and gooseberries is to compile a map during the summer.

All men receiving posters are expected to post them in conspicuous places and call the attention of all their associates to the disease. All reports regarding the presence of the disease, specimens of diseased material, plantings of black currants and currant and gooseberry specimens as well as requests for information, to be sent to the Office of Blister Rust Control, 429 Lyon Building, Seattle, Washington.

The white pine blister rust disease is a very serious one, and already is beyond eradication in the eastern white pine areas. We want to be on guard to prevent its spread here in the Northwest and it is expected that every Forest officer will cooperate fully in the effort to secure information as to the extent and location of the five-needle pines and any probable indications of the disease.

Very truly yours,

Geo. H. Cecil, District Forester,

By E. H. Kavanaugh

Acting.



IV.  
PROJECT 3. - FIELD SURVEY

Project 3, for a field survey to determine whether natural or artificial barriers to the spread of the disease exist, was carried on under the direction of the Office of Forest Pathology. The cost of this work is given in the financial report.

V.  
PROJECT 4. - QUARANTINE ENFORCEMENT

Summary and Purpose of Quarantine: After the scouting carried on in the fall of 1921 and the early spring of 1922, the disease was known to occur on planted white pines and cultivated black currants at several points in southwestern British Columbia, on two pines in a nursery at Mt. Vernon, Washington and on cultivated black currants at Blaine, Sumas, Mt. Vernon, Beverly Park and Port Townsend, Washington. In order to prevent the spread of the disease from these areas into other western regions, state and federal quarantines were promulgated restricting the shipment of blister rust host plants out of that portion of Washington lying west of the summit of the Cascade ridge. Previously, state and federal quarantines had been issued prohibiting the shipment of blister rust host plants in a westerly direction across the line represented by the western boundaries of Minnesota, Iowa, Missouri, Arkansas, Louisiana, and the federal quarantine forbidding the shipment of these plants into the United States from any foreign country, including Canada.

Quarantine Inspection Spring 1922: On March 21, 1922, when the emergency appropriation was made available, the spring shipment of nursery stock was well under way. So the work of most immediate importance was the enforcement of the above quarantines. For this purpose inspection of mail, freight and express shipments was carried on at the following transfer and destination points by the Office of Blister Rust Control, it being known from previous experience that inspection at these points would catch the majority of plant shipments into the areas which the quarantines were designed to protect: Chicago, Ill.; St. Paul, Minn.; Minneapolis, Minn.; Council Bluffs, Iowa; Sioux City, Iowa; St. Louis, Mo.; Kansas City, Mo.; Omaha, Neb.; Denver, Colo.; Ogden, Utah; Spokane, Wash.; Pendleton, Ore.; Portland, Ore.; Pasco, Wash.; Seattle, Wash.; Tacoma, Wash.; and Vancouver, Washington.

This work consisted of cooperating with the Federal Horticultural Board and state quarantine officers in the inspection of parcel post, freight and express at transfer points, shipping points and points of destination. In order to apprehend blister rust host plants shipped in violation of the quarantines, close and effective cooperation existed between the federal and state inspection forces. During the spring shipping season of 1922, a total of 147 violations of federal blister rust quarantine and 517 violations of the state blister rust quarantine were reported by the inspectors and by nurserymen.





Quarantine Inspection, Fall 1922: By the time of the opening of the fall inspection season, October 20, the quarantines affecting the Washington situation had been somewhat changed. The State of Washington quarantine order No. 12 permitted licensed and inspected nurseries in Washington located west of the Cascades to ship currants and gooseberries, black currants excepted, when completely defoliated, to any part of the state of Washington. The federal quarantine was made effective against the whole state.

The following inspection points were maintained last fall:  
Portland, Oregon; Pendleton, Oregon; Spokane, Wash.; Pasco,; Bellingham, Wash.; Tacoma, Wash.; Vancouver, Washington.

Thus far 17 violations of Federal Quarantine No. 54 have been intercepted. Of these, 7 were sent by nurserymen and 10 by private individuals. Two of these shipments were white pines, while the others were Ribes. All were either turned back or destroyed.

Fall inspection was discontinued on October 31, at all points except Portland and Tacoma. Since these points were on the coast where nursery stock moves all winter, the inspection at these points has continued up to January 31, 1923.

The following table gives an analysis of all the violations of federal and state quarantines which were recorded from March 21 to January 31, 1923.

Summary of Quarantine Violations.

|         |        | Quarantine Violated |    |             |    |              |    |             |   |              |  |
|---------|--------|---------------------|----|-------------|----|--------------|----|-------------|---|--------------|--|
|         |        |                     |    |             |    |              |    |             |   | Within, Out: |  |
|         |        |                     |    |             |    |              |    |             |   | Of, Or In:   |  |
|         |        |                     |    | From For-   |    | From East-   |    | From Coast: |   | to Coast     |  |
|         |        | Transport-          |    | sign Coun-  |    | ern United-  |    | Region In.  |   | Region Wh.   |  |
|         |        | -ing                |    | tries, Fed: |    | States, Fed: |    | Fed. Quar.  |   | State Quar:  |  |
| Shipper | Agency | Quar. #             | 37 | Quar. #     | 26 | Quar. #      | 54 | Quar. #     | 7 |              |  |
|         |        |                     |    | Ribes:      |    | Pine:        |    | Ribes:      |   | Pine:        |  |
|         |        |                     |    |             |    |              |    |             |   |              |  |
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|         |        |                     |    |             |    |              |    |             |   |              |  |



VI.

PROJECT 5. - MISCELLANEOUS EXPENSES

The expenditures under this project included all miscellaneous expenses in Washington, D. C. and the maintenance of the branch office in Seattle, Washington. The amount of these expenditures is given in the financial report.





| NAME                  | PURPOSE  |          |           |        |          | STATE TO WHICH CHARGED |        |          |         |          |            |         |            |          |   | PROJECT TO WHICH CHARGED |     |          |          |             |          |
|-----------------------|----------|----------|-----------|--------|----------|------------------------|--------|----------|---------|----------|------------|---------|------------|----------|---|--------------------------|-----|----------|----------|-------------|----------|
|                       | Salary   | Expenses | Transp'n. | Auto   | Total    | Calif.                 | Colo.  | Idaho    | Montana | Oregon   | Washington | Wyoming | Interstate | Total    | I | II                       | III | IV       | V        | Supervision | Total    |
| Alexander, Constance  | 750.00   | 9.15     |           |        | 759.15   |                        |        |          |         |          |            |         | 759.15     | 759.15   |   |                          |     |          | 759.15   |             | 759.15   |
| Anderson, Miles M.    | 225.00   | 243.14   | 11.83     |        | 479.97   |                        |        |          |         |          | 479.97     |         | 479.97     | 479.97   |   |                          |     |          |          |             | 479.97   |
| Bach, Walter J.       | 962.50   | 734.77   | 108.10    | 218.82 | 2,024.19 |                        |        |          | 591.19  |          | 867.08     |         | 867.08     | 2,024.19 |   | 1,458.27                 |     | 565.42   |          | 213.50      | 2,024.19 |
| Basse, H. P.          |          | 9.95     | 5.20      |        | 15.15    |                        |        |          |         | 15.15    |            |         | 15.15      | 15.15    |   |                          |     |          |          |             | 15.15    |
| Barton, Stanley A.    | 1,095.00 | 888.02   | 163.81    |        | 2,146.83 |                        |        |          |         | 1,903.54 |            |         | 1,903.54   | 2,146.83 |   | 1,903.54                 |     | 243.29   |          |             | 2,146.83 |
| Bartow, Hubert G.     | 845.00   | 581.20   | 36.05     | 255.18 | 1,718.93 |                        |        |          |         | 1,903.54 |            |         | 1,903.54   | 1,718.93 |   | 1,718.93                 |     |          |          |             | 1,718.93 |
| Bovans, Alice R.      | 39.00    |          |           |        | 39.00    |                        |        |          |         |          |            |         | 39.00      | 39.00    |   |                          |     |          |          |             | 39.00    |
| Bowman, Donald        | 225.00   | 350.52   | 13.50     |        | 569.02   |                        |        |          |         | 39.00    |            |         | 569.02     | 569.02   |   | 569.02                   |     |          |          |             | 569.02   |
| Braden, K. J.         | 280.00   | 155.67   | 24.49     |        | 460.16   |                        |        |          |         |          |            |         | 460.16     | 460.16   |   |                          |     | 460.16   |          |             | 460.16   |
| Bradfield, Earl F.    | 270.00   | 274.91   |           |        | 544.91   |                        |        | 512.51   |         |          | 32.40      |         | 544.91     | 544.91   |   | 544.91                   |     |          |          |             | 544.91   |
| Bricker, John P.      | 537.00   | 575.12   | 12.20     | 176.57 | 1,414.71 |                        |        |          |         |          |            |         | 610.03     | 1,414.71 |   | 1,165.66                 |     | 249.05   |          |             | 1,414.71 |
| Bridges, Naomi        |          | 72.47    |           |        | 72.47    |                        |        |          |         |          |            |         | 72.47      | 72.47    |   |                          |     |          | 72.47    |             | 72.47    |
| Briggs, Valerie L.    | 112.50   |          |           |        | 112.50   |                        |        |          |         | 112.50   |            |         | 112.50     | 112.50   |   | 112.50                   |     |          |          |             | 112.50   |
| Brown, Frank A.       | 837.50   | 484.32   | 121.86    |        | 1,443.68 |                        |        | 1,443.58 |         |          |            |         | 1,443.68   | 1,443.68 |   | 1,443.68                 |     |          |          |             | 1,443.68 |
| Brown, Rex H.         | 540.00   | 697.82   | 4.55      | 32.80  | 1,233.37 |                        |        |          |         |          | 623.18     |         | 623.18     | 1,233.37 |   | 1,233.37                 |     | 309.28   |          |             | 1,233.37 |
| Calhoun, Roy          | 1,275.00 | 15.13    | 135.71    |        | 1,426.84 |                        |        |          |         |          |            |         | 1,426.84   | 1,426.84 |   | 1,426.84                 |     |          | 1,426.84 |             | 1,426.84 |
| Cary, Norman L.       | 291.67   | 304.61   | 31.29     |        | 627.57   |                        |        |          |         |          |            |         | 627.57     | 627.57   |   |                          |     | 627.57   |          |             | 627.57   |
| Olemens, Mary S.      | 490.00   |          |           |        | 490.00   |                        |        |          |         | 490.00   |            |         | 490.00     | 490.00   |   | 490.00                   |     |          |          |             | 490.00   |
| Croese, Frank H.      | 750.00   | 423.56   |           | 258.80 | 1,500.71 |                        |        |          |         |          | 1,500.71   |         | 1,500.71   | 1,500.71 |   | 1,500.71                 |     |          |          |             | 1,500.71 |
| Curtis, D. S.         | 187.50   | 311.44   |           |        | 498.94   |                        |        |          |         |          |            |         | 498.94     | 498.94   |   | 498.94                   |     |          |          |             | 498.94   |
| Dana, Miles F.        | 220.00   | 163.31   | 20.29     | 52.80  | 466.84   |                        |        |          |         |          | 466.84     |         | 466.84     | 466.84   |   | 466.84                   |     |          |          |             | 466.84   |
| delaCoe, William      | 225.00   | 286.18   | 33.00     |        | 544.18   |                        |        |          |         |          | 544.18     |         | 544.18     | 544.18   |   | 544.18                   |     |          |          |             | 544.18   |
| Dement, Virginia      | 39.00    |          |           |        | 39.00    |                        |        | 39.00    |         |          |            |         | 39.00      | 39.00    |   | 39.00                    |     |          |          |             | 39.00    |
| Detwiler, S. E.       | 750.00   | 1,010.44 | 345.47    |        | 2,105.91 |                        |        |          |         |          |            |         | 2,105.91   | 2,105.91 |   | 2,105.91                 |     |          |          | 2,105.91    | 2,105.91 |
| Duncan, Gordon A.     | 246.00   | 342.67   | 172.41    |        | 761.08   |                        |        |          |         |          | 219.65     |         | 761.08     | 761.08   |   | 761.08                   |     |          |          |             | 761.08   |
| Dymstra, Theodore P.  | 540.00   | 644.43   | 73.42     |        | 1,257.85 |                        |        |          |         | 1,257.85 |            |         | 1,257.85   | 1,257.85 |   | 1,257.85                 |     |          |          |             | 1,257.85 |
| Eddy, Richard H.      | 537.00   | 575.55   | 58.93     | 28.00  | 1,207.16 |                        |        |          |         |          | 528.01     |         | 1,207.16   | 1,207.16 |   | 1,207.16                 |     |          |          |             | 1,207.16 |
| Enderabee, W. J.      | 305.00   | 260.71   | 39.38     |        | 605.09   |                        |        |          |         |          |            |         | 605.09     | 605.09   |   | 605.09                   |     |          |          |             | 605.09   |
| Epling, Carl O.       | 460.00   | 395.37   | 80.66     | 100.75 | 1,094.12 |                        |        |          |         | 1,094.12 |            |         | 1,094.12   | 1,094.12 |   | 1,094.12                 |     |          |          |             | 1,094.12 |
| Ferguson, Dwight H.   | 540.00   | 674.36   | 45.00     |        | 1,517.71 |                        |        |          |         | 1,517.71 |            |         | 1,517.71   | 1,517.71 |   | 1,517.71                 |     |          |          |             | 1,517.71 |
| Gaines, Henry E.      | 300.00   | 256.30   |           | 172.48 | 708.78   |                        |        |          |         |          | 708.78     |         | 708.78     | 708.78   |   | 708.78                   |     |          |          |             | 708.78   |
| Garrett, Albert O.    | 460.00   | 694.67   | 145.47    |        | 1,300.14 |                        |        | 330.14   |         |          |            |         | 1,300.14   | 1,300.14 |   | 1,300.14                 |     |          |          |             | 1,300.14 |
| Glindeman, Herbert L. | 270.00   | 295.62   | 6.15      |        | 571.77   |                        |        | 534.50   |         |          | 37.27      |         | 571.77     | 571.77   |   | 571.77                   |     |          |          |             | 571.77   |
| Goodding, Leslie M.   | 1,666.65 | 888.57   | 308.82    | 334.42 | 3,198.47 |                        | 189.93 |          | 56.50   | 1,167.90 | 960.37     | 188.94  | 634.13     | 3,198.47 |   | 2,565.64                 |     | 634.83   |          |             | 559.32   |
| Graham, Donald H.     | 270.00   | 275.73   | 13.59     |        | 559.32   |                        |        |          | 559.32  |          |            |         | 559.32     | 559.32   |   | 559.32                   |     |          | 175.00   |             | 175.00   |
| Green, Alfred W.      | 175.00   |          |           |        | 175.00   |                        |        |          |         |          |            |         | 175.00     | 175.00   |   | 175.00                   |     |          |          |             | 175.00   |
| Hess, Manley M.       | 1,165.00 | 316.90   | 18.68     | 489.62 | 2,064.25 |                        |        |          |         | 2,064.25 |            |         | 2,064.25   | 2,064.25 |   | 2,064.25                 |     |          |          |             | 2,064.25 |
| Hodgkins, L. W.       | 212.50   | 203.05   | 65.83     |        | 481.38   |                        |        |          |         |          |            |         | 481.38     | 481.38   |   | 481.38                   |     |          |          |             | 481.38   |
| Holton, John W.       | 700.00   | 385.18   | 9.04      | 350.00 | 1,630.29 |                        |        |          |         |          | 1,630.29   |         | 1,630.29   | 1,630.29 |   | 1,630.29                 |     |          |          |             | 1,630.29 |
| Huber, Glenn A.       | 243.00   | 319.05   | 18.94     |        | 581.00   |                        |        |          |         |          | 581.00     |         | 581.00     | 581.00   |   | 581.00                   |     |          |          |             | 581.00   |
| Johnson, Charles H.   | 1,616.66 | 1,188.22 | 166.31    | 435.81 | 3,672.40 |                        |        |          |         |          | 2,371.74   |         | 1,300.66   | 3,672.40 |   | 2,371.74                 |     | 1,300.66 |          |             | 3,672.40 |
| Kee, Walter H.        | 231.00   | 85.50    |           |        | 316.50   |                        |        |          |         |          |            |         | 316.50     | 316.50   |   | 316.50                   |     |          |          | 358.55      | 1,009.23 |
| Knapp, F. Malcolm     | 625.00   | 456.59   | 42.74     | 4.90   | 1,009.23 |                        |        |          |         |          | 87.07      |         | 922.16     | 1,009.23 |   | 650.68                   |     |          |          |             | 654.68   |
| Lackey, Charles F.    | 243.00   | 292.74   | 13.94     |        | 554.68   |                        |        |          |         |          | 554.68     |         | 554.68     | 554.68   |   | 554.68                   |     |          |          |             | 554.68   |
| Lawrence, William E.  | 675.00   | 317.49   | 37.50     | 211.91 | 1,241.70 |                        |        |          |         |          |            |         | 1,241.70   | 1,241.70 |   | 1,241.70                 |     |          |          |             | 1,241.70 |
| Leonari, Daryl B.     | 477.00   | 577.13   | 6.27      | 183.87 | 1,288.72 |                        |        |          |         |          | 783.86     |         | 1,288.72   | 1,288.72 |   | 1,110.21                 |     | 178.51   |          |             | 58.00    |
| Lervold, Riner        | 58.00    |          |           |        | 58.00    |                        |        |          |         |          |            |         | 58.00      | 58.00    |   | 58.00                    |     |          | 58.00    |             | 58.00    |
| Liddell, E. R.        | 225.00   | 197.12   | 83.66     |        | 505.78   |                        |        |          |         |          | 505.78     |         | 505.78     | 505.78   |   | 505.78                   |     |          |          |             | 505.78   |
| Longyear, B. O.       | 225.00   | 244.47   |           | 105.35 | 574.82   |                        |        | 349.82   |         |          |            |         | 574.82     | 574.82   |   | 574.82                   |     |          |          |             | 574.82   |
| Lumgren, Rolfe P.     | 537.00   | 660.39   | 40.12     |        | 1,235.51 |                        |        |          |         |          | 601.81     |         | 633.70     | 1,235.51 |   | 633.70                   |     |          |          |             | 633.70   |
| McNemey, Edwin J.     | 270.00   | 268.19   | 11.25     |        | 549.44   |                        |        | 549.44   |         |          |            |         | 549.44     | 549.44   |   | 549.44                   |     |          |          | 638.75      | 638.75   |
| Meinecke, E. P.       |          | 638.75   |           |        | 638.75   |                        |        |          |         |          |            |         | 638.75     | 638.75   |   | 638.75                   |     |          |          |             | 638.75   |
| Morsland, Heber M.    | 370.00   | 297.02   |           |        | 667.02   |                        |        |          |         |          | 667.02     |         | 667.02     | 667.02   |   | 667.02                   |     |          |          |             | 667.02   |
| Mowatt, Vivian        | 18.00    |          |           |        | 18.00    |                        |        | 18.00    |         |          |            |         | 18.00      | 18.00    |   | 18.00                    |     |          |          |             | 18.00    |
| Mumman, H. J.         | 228.67   | 163.84   | 4.68      |        | 397.19   |                        |        |          |         |          | 397.19     |         | 397.19     | 397.19   |   | 397.19                   |     |          | 79.00    |             | 408.09   |
| Noll, Mark D.         | 221.00   | 171.20   | 15.89     |        | 408.09   |                        |        |          |         |          | 329.09     |         | 79.00      | 408.09   |   | 329.09                   |     |          |          |             | 154.14   |
| Oltman, Rodie W.      | 63.00    | 91.14    |           |        | 154.14   |                        |        |          |         |          | 154.14     |         | 154.14     | 154.14   |   | 154.14                   |     |          |          |             | 500.49   |
| Osa, Lorents A.       | 225.00   | 270.76   | 4.73      |        | 500.49   |                        |        |          |         |          | 500.49     |         | 500.49     | 500.49   |   | 500.49                   |     |          |          |             | 785.43   |
| Parker, J. Roland     | 270.00   | 352.85   | 106.94    | 30.00  | 785.43   |                        |        | 504.47   |         |          | 280.96     |         | 785.43     | 785.43   |   | 785.43                   |     |          |          |             | 253.74   |
| Parker, T. O.         |          | 199.16   | 54.58     |        | 253.74   |                        |        |          |         |          |            |         | 253.74     | 253.74   |   | 253.74                   |     |          |          |             | 901.63   |
| Parkins, Arlie L.     | 270.00   | 285.75   |           | 220.00 | 901.63   |                        |        | 840.54   |         |          | 61.09      |         | 901.63     | 901.63   |   | 901.63                   |     |          |          |             | 3,010.49 |
| Patrie, Carthon R.    | 1,291.67 | 1,188.86 | 529.96    |        | 3,010.49 |                        |        |          |         |          |            |         | 3,010.49   | 3,010.49 |   | 2,450.88                 |     |          |          |             | 56.00    |
| Perry, C. E.          | 56.00    |          |           |        | 56.00    |                        |        |          |         |          |            |         | 56.00      | 56.00    |   | 56.00                    |     |          |          |             | 595.30   |
| Pickler, W. E.        | 315.00   | 250.30   | 30.00     |        | 595.30   |                        |        |          |         |          |            |         | 595.30     | 595.30   |   | 595.30                   |     |          |          |             | 4,142.15 |
| Posay, G. E.          | 2,584.45 | 1,304.87 | 252.83    |        | 4,142.15 |                        |        |          |         |          |            |         | 4,142.15   | 4,142.15 |   | 4,142.15                 |     |          |          | 185.00      | 3,680.03 |
| Putnam, Henry H.      | 1,795.00 | 1,060.36 | 61.53     | 490.43 | 3,580.03 |                        |        |          |         |          | 2,722.63   |         | 857.40     | 3,580.03 |   | 3,580.03                 |     |          |          |             | 680.43   |
| Randall, C. E.        | 350.00   | 275.10   | 55.33     |        | 680.43   |                        |        |          |         |          |            |         | 680.43     | 680.43   |   | 680.43                   |     |          |          |             | 8.70     |
| Redfield, E. E.       |          | 8.70     |           |        | 8.70     |                        |        | 8.70     |         |          |            |         | 8.70       | 8.70     |   | 8.70                     |     |          |          |             | 184.84   |
| Renner, F. G.         | 145.00   | 39.84    |           |        | 184.84   |                        |        |          |         |          | 184.84     |         | 184.84     | 184.84   |   | 184.84                   |     |          |          |             | 1,540.89 |
| Rookie, William A.    | 739.67   | 428.06   | 45.00     | 225.00 | 1,540.89 |                        |        |          |         |          |            |         | 1,540.89   | 1,540.89 |   | 1,540.89                 |     |          |          |             | 2,992.96 |
| Root, George A.       | 1,500.00 | 1,097.49 | 352.85    | 38.84  | 2,992.96 |                        |        |          |         | 1,084.94 | 502.90     |         | 1,405.12   | 2,992.96 |   | 1,587.84                 |     | 1,405.12 |          |             | 10.50    |
| Ruef, Gladys          | 10.50    |          |           |        | 10.50    |                        |        |          |         |          | 10.50      |         | 10.50      | 10.50    |   | 10.50                    |     |          |          |             | 970.53   |
| Ryan, Cecil C.        | 270.00   | 316.03   |           | 212.50 | 970.53   |                        |        | 923.25   |         |          | 47.28      |         |            |          |   |                          |     |          |          |             |          |



| NAME                  | Salary   | Expenses | Redeemable | Transp'n | Auto   | Purpose |
|-----------------------|----------|----------|------------|----------|--------|---------|
| Alexander, Constance  | \$750.00 | 40.15    |            |          |        |         |
| Anderson, Miles M.    | 325.00   | 245.14   | 411.83     |          |        |         |
| Bach, Walter J.       | 925.50   | 734.77   | 108.10     | 218.83   |        |         |
| Baker, H. P.          |          | 5.20     |            |          |        |         |
| Barton, Stanley A.    | 1,095.00 | 886.02   | 163.81     |          |        |         |
| Bartow, Hubert G.     | 845.00   | 581.20   | 36.03      | 255.18   | 41.50  |         |
| Bevens, Alice R.      | 32.00    |          |            |          |        |         |
| Bowman, Donald        | 325.00   | 370.52   | 13.50      |          |        |         |
| Bradley, E. J.        | 280.00   | 152.67   | 24.40      |          |        |         |
| Bradley, Earl R.      | 270.00   | 274.91   |            |          |        |         |
| Bricker, John R.      | 537.00   | 375.12   | 12.20      | 176.67   | 113.73 |         |
| Bridges, Naomi        |          | 72.47    |            |          |        |         |
| Bridges, Valerie L.   | 112.50   |          |            |          |        |         |
| Brown, Frank A.       | 237.50   | 484.32   | 121.86     |          |        |         |
| Brown, Rex H.         | 240.00   | 207.82   | 4.55       | 22.80    | 8.20   |         |
| Calhoun, Roy          | 1,275.00 | 15.12    | 136.71     |          |        |         |
| Cary, Norman J.       | 291.27   | 304.61   | 31.22      |          |        |         |
| Clemens, Mary B.      | 490.00   |          |            |          |        |         |
| Cross, Frank E.       | 750.00   | 423.56   |            | 258.80   | 68.25  |         |
| Cutler, D. S.         | 187.50   | 311.44   |            |          |        |         |
| Dana, Miss F.         | 220.00   | 163.31   | 20.20      | 52.80    | 10.44  |         |
| DeMacedo, William     | 225.00   | 268.12   | 23.00      |          |        |         |
| Dement, Virginia      | 32.00    |          |            |          |        |         |
| Detwiler, S. B.       | 750.00   | 1,010.44 | 345.47     |          |        |         |
| Duncan, Gordon A.     | 245.00   | 342.67   | 172.41     |          |        |         |
| Dyckstra, Theodore P. | 540.00   | 644.43   | 72.42      |          |        |         |
| Eddy, Richard H.      | 227.00   | 572.52   | 52.92      | 22.00    | 7.68   |         |
| Engelbrecht, W. J.    | 205.00   | 260.71   | 22.38      |          |        |         |
| Epling, Carl C.       | 450.00   | 325.27   | 30.06      | 100.75   | 27.84  |         |
| Ferguson, Dwight H.   | 540.00   | 674.23   | 42.00      | 181.00   | 77.25  |         |
| Gaines, Henry E.      | 300.00   | 228.30   |            | 172.48   |        |         |
| Garnett, Albert O.    | 460.00   | 694.67   | 145.47     |          |        |         |
| Glinde, Herbert L.    | 270.00   | 222.62   | 6.15       |          |        |         |
| Gooding, Leslie W.    | 1,666.66 | 888.27   | 206.62     | 324.43   |        |         |
| Graham, Donald H.     | 270.00   | 275.72   | 12.22      |          |        |         |
| Green, Alfred W.      | 175.00   |          |            |          |        |         |
| Hess, Emily M.        | 1,165.00 | 216.90   | 12.66      | 482.62   | 74.06  |         |
| Hodgkins, L. W.       | 212.50   | 202.02   | 62.82      |          |        |         |
| Horton, John W.       | 700.00   | 328.18   | 9.04       | 260.00   | 186.07 |         |
| Huber, Glenn A.       | 28.00    | 219.03   | 18.94      |          |        |         |
| Johnson, Charles R.   |          | 1,000.00 | 152.31     | 422.81   | 275.40 |         |
| Kee, Walter H.        |          | 60.00    |            |          |        |         |
| Knepp, F. W.          |          | 425.00   |            |          | 4.90   |         |
| Knapp, F. W.          | 207.00   | 207.00   |            |          |        |         |
| Locke, Walter W.      | 675.00   | 277.42   | 27.00      | 111.21   |        |         |
| Long, W. J.           | 477.00   | 277.21   | 6.27       | 102.00   | 44.77  |         |
| Long, W. J.           | 58.00    |          |            |          |        |         |
| Long, W. J.           | 225.00   | 197.12   | 22.66      |          |        |         |
| Long, W. J.           |          | 244.47   |            | 102.22   |        |         |
| Long, W. J.           | 227.00   | 280.29   | 48.12      |          |        |         |

STATEMENT II, DISTRIBUTION OF FUNDS "WHITE PINE BLISTER RUST CONTROL"  
1222 - March 31, 1923  
ACCORDING TO STATES, SUSPENSE & PROJECTS.

ITEMS DIRECTLY CHARGEABLE TO STATES.

PROJECT II.

|  | Salaries    | Expenses    | Auto hire  | Trans. Requests | Suppliee   | Freight & Express | Total        |
|--|-------------|-------------|------------|-----------------|------------|-------------------|--------------|
| CALIFORNIA:                              |             |             |            |                 |            |                   |              |
| Scouting                                 | \$1,214.85  | \$1,235.90  |            | \$556.18        |            | \$29.01           | \$3,035.94   |
|  | \$1,214.85  | \$1,235.90  |            | \$556.18        |            | \$29.01           | \$3,035.94   |
| COLORADO:                                |             |             |            |                 |            |                   |              |
| Scouting                                 | \$75.00     | \$305.87    | \$105.35   | \$53.53         |            |                   | \$539.75     |
|  | \$75.00     | \$305.87    | \$105.35   | \$53.53         |            |                   | \$539.75     |
| IDAHO:                                   |             |             |            |                 |            |                   |              |
| Scouting                                 | \$1,689.17  | \$2,540.82  | \$588.00   | \$310.46        |            |                   | \$5,128.45   |
| Auxiliary Scouting                       | 565.60      | 323.01      |            | 123.89          |            |                   | 1,012.50     |
| School                                   | 691.79      | 340.07      |            | 114.63          | \$19.85    | \$115.13          | 1,281.47     |
|  | \$2,946.56  | \$3,203.90  | \$588.00   | \$548.98        | \$19.85    | \$115.13          | \$7,422.42   |
| MONTANA:                                 |             |             |            |                 |            |                   |              |
| Scouting                                 | \$1,494.50  | \$1,149.28  | \$408.49   | \$75.26         |            |                   | \$3,127.53   |
| School                                   | 522.25      | 301.09      |            | 89.21           | \$6.31     | \$146.31          | 1,065.17     |
|  | \$2,016.75  | \$1,450.37  | \$408.49   | \$164.47        | \$6.31     | \$146.31          | \$4,192.70   |
| OREGON:                                  |             |             |            |                 |            |                   |              |
| Location                                 | \$2,744.31  | \$2,607.15  | \$523.48   | \$407.84        | *\$90.00   |                   | \$6,372.78   |
| Scouting                                 | 1,771.66    | 1,511.85    | 168.06     | 227.70          |            | \$7.50            | 3,686.75     |
| Auxiliary Scouting                       | 595.03      | 423.88      |            | 148.09          |            |                   | 1,165.00     |
| Nursery Inspection                       | 221.25      | 208.90      | 16.67      | 48.36           |            |                   | 495.18       |
| School                                   | 762.47      | 442.14      |            | 67.99           | 35.74      | 237.79            | 1,546.13     |
|  | \$6,092.72  | \$5,193.92  | \$708.19   | \$899.98        | \$125.74   | \$245.29          | \$13,265.84  |
| WASHINGTON:                              |             |             |            |                 |            |                   |              |
| Location                                 | \$6,110.36  | \$6,418.10  | \$1,294.89 | \$178.54        |            |                   | \$14,001.89  |
| Eradication                              | 6,700.00    | 4,024.13    | 2,063.96   | 90.47           |            |                   | 12,878.56    |
| Scouting                                 | 3,060.18    | 2,464.98    | 984.11     | 178.18          |            |                   | 6,687.45     |
| Auxiliary Scouting                       | 523.88      | 265.86      | 257.33     | 37.19           |            | \$16.57           | 1,100.83     |
| Nursery Inspection                       | 269.77      | 116.40      | 22.17      | 47.89           |            |                   | 456.23       |
|  | \$16,664.19 | \$13,289.47 | \$4,622.46 | \$532.27        |            | \$16.57           | \$35,124.96  |
| WYOMING:                                 |             |             |            |                 |            |                   |              |
| Scouting                                 | \$50.00     | \$65.40     | \$20.00    | \$53.54         |            |                   | \$188.94     |
|  | \$50.00     | \$65.40     | \$20.00    | \$53.54         |            |                   | \$188.94     |
| ITEMS NOT DIRECTLY CHARGEABLE TO STATES. |             |             |            |                 |            |                   |              |
| PROJECT I.                               |             |             |            |                 |            |                   |              |
| Experimental Eradication                 | \$3,316.04  | \$1,219.18  |            | \$578.81        | \$149.90   | \$2.63            | \$5,266.56   |
|  | \$3,316.04  | \$1,219.18  |            | \$578.81        | \$149.90   | \$2.63            | \$5,266.56   |
| PROJECT II.                              |             |             |            |                 |            |                   |              |
| Scouting in British Columbia             | \$947.52    | \$1,350.46  | \$181.00   | \$67.38         |            |                   | \$2,546.36   |
|  | \$947.52    | \$1,350.46  | \$181.00   | \$67.38         |            |                   | \$2,546.36   |
| Suppliee Charged to 2-999                |             |             |            |                 | \$1,156.62 |                   | \$1,156.62   |
| Freight & Exp. " " 2-999                 |             |             |            |                 |            | \$661.63          | 661.63       |
|  |             |             |            |                 | \$1,156.62 | \$661.63          | \$1,818.25   |
| PROJECT III.                             |             |             |            |                 |            |                   |              |
| Barrier Survey                           | \$2,369.86  | \$1,115.92  | \$436.91   | \$135.08        | \$72.00    | \$1.23            | \$4,131.00   |
|  | \$2,369.86  | \$1,115.92  | \$436.91   | \$135.08        | \$72.00    | \$1.23            | \$4,131.00   |
| PROJECT IV.                              |             |             |            |                 |            |                   |              |
| Western Quarantine                       | \$4,986.62  | \$4,806.49  |            | \$610.22        | \$7.92     | \$2.23            | \$10,413.48  |
| Mississippi Valley Quarantine            | \$2,793.67  | 2,492.74    |            | 449.21          |            |                   | 5,735.62     |
|  | \$7,780.29  | \$7,299.23  |            | \$1,059.43      | \$7.92     | \$2.23            | \$16,149.10  |
| PROJECT V.                               |             |             |            |                 |            |                   |              |
| Office Clerical                          | \$2,888.67  | \$96.75     |            | \$136.71        |            |                   | \$3,122.13   |
| Office Rent                              |             |             |            |                 | \$818.19   |                   | 818.19       |
| Telephone & Telegraph                    |             |             |            |                 | 291.77     |                   | 291.77       |
| General Supplies & Freight               |             |             |            |                 | 2,112.00   | \$555.45          | 2,667.45     |
|  | \$2,888.67  | \$96.75     |            | \$136.71        | \$3,221.96 | \$555.45          | \$6,899.54   |
| SUPERVISION.                             |             |             |            |                 |            |                   |              |
| General Supervision                      | \$6,127.80  | \$3,256.82  |            | \$986.73        |            |                   | \$10,371.35  |
| Correlation of Field Data                | 556.89      | 185.66      |            | 4.50            |            |                   | 757.05       |
|  | \$6,694.69  | \$3,442.48  |            | \$991.23        |            |                   | \$11,128.40  |
| TOTALS. . . . .                          | \$53,057.14 | \$39,268.87 | \$7,070.40 | \$5,777.59      | \$4,760.30 | \$1,775.48        | \$111,709.78 |

\* Bicycle hire.



GENERAL DISTRIBUTION OF FUNDING "WHITE RINGS"  
- 1988 -

[illegible]



TABLE 4. ANALYSIS OF CARS RENTED FROM JUNE 14, 1922 TO DECEMBER 31, 1922

| Car No.      | Region             | Owner                                      | Driver                      | Make and Condition         | Period Covered   | No. Days | Total Costs     |             |           | Cost Per Mile |          |       | Miles   |
|--------------|--------------------|--|-----------------------------|----------------------------|------------------|----------|-----------------|-------------|-----------|---------------|----------|-------|---------|
|              |                    |  |                             |                            |                  |          | Rate            | Gas and Oil | Total     | Gas           | Oil      | Total |         |
| 1            | Western Washington | Potts & Hyde Motor Co., Seattle, Wash.     | R. H. Brown                 | Stripped Ford, Old '14     | August 21-28     | 8        | \$2.00          | \$16.00     | \$6.45    | \$22.45       |          |       | 327 1/8 |
| 2            | "                  | Friday Harbor Garage, Friday Harbor, Wash. | H. M. Walker                | Ford Touring, Old          | August 3, 4, 7   | 3        | 5.00            | 15.00       | 5.31      | 20.31         |          |       | 180     |
| 3            | "                  | James & Co., Seattle, Wash.                | F. H. Croese                | Ford Roadster, Fair        | Sept. 4-Dec. 31  | 115      | 3 Mo. @ \$50.00 | 200.00      | 42.55     | 242.55        |          |       | 2,381   |
| 4            | "                  | Friday Harbor Garage, Friday Harbor, Wash. | H. G. Bartow                | Ford Touring, Good '21     | Sept. 8-9        | 2        | \$6.00          | 12.00       | 1.50      | 13.50         |          |       | 77      |
| 5            | "                  | Central Ford Agency, Seattle, Wash.        | B. F. Dana                  | " " Fair                   | June 20-Aug. 31  | 73       |                 | 100.00      | 236.67    | 52.16         | 288.83   |       | 3,176   |
| 6            | British Columbia   | Coyle & Woodruff, Seattle, Wash.           | J. W. Hoteon                | " " New '22                | June 16-Oct. 31  | 138      |                 | 100.00      | 450.00    | 201.22        | 651.22   |       | 8,340   |
| 7            | Western Washington | W. M. Simcoe, Pt. Townsend, Wash.          | C. H. Johnson               | " " Fair                   | June 20-Nov. 30  | 164      | 5 Mo. @ 100.00  | 486.87      | 247.33    | 734.00        |          |       | 11,848  |
| 8            | "                  | Central Ford Agency, Seattle, Wash.        | E. H. Steffen               | " " Good                   | July 8-Aug. 31   | 55       |                 | 100.00      | 177.42    | 53.61         | 231.03   |       | 2,906   |
| 9            | "                  | Oliver Lundy, Richardeon, Wash.            | R. Sprague                  | " " Old                    | Aug. 21-22       | 2        | \$5.00          | 10.00       | 2.35      | 12.35         |          |       | 96      |
| 10           | "                  | Sunset Tire Co., Roguam, Wash.             | W. H. Wirt                  | " " ?                      | July 12-14       | 3        | 5.00            | 15.00       | 8.30      | 23.30         |          |       | 309     |
| 11           | "                  | Standard Auto Co., Bellingham, Wash.       | M. M. Heese                 | Overland Touring, New '22  | Oct. 1-Dec. 31   | 92       |                 | 60.00       | 180.00    | 41.20         | 221.20   |       | 2,714   |
| 12           | "                  | Bigs Eddy, Yelm, Washington                | H. H. Eddy                  | Ford Touring, Good '20     | July 11-18       | 7        | 4.00            | 28.00       | 7.68      | 35.68         |          |       | 385     |
| 13           | Oregon             | W. E. Blodgett, Mount Vernon, Washington   | H. N. Putnam                | Chevrolet Touring, New '22 | June 17-Dec. 31  | 158      |                 | 95.00       | 490.43    | 154.75        | 645.18   |       | 11,082  |
| TOTALS       |                    |  |                             |                            |                  | 820      |                 | \$2317.19   | \$824.41  | \$3141.60     |          |       | 43,821  |
| 14           | Eastern Washington | Republic Motor Co., Republic, Wash.        | W. A. Rockie                | Ford Touring, ?            | June 23-30       | 8        | \$5.625         | \$45.00     | \$10.83   | \$55.83       |          |       | 440     |
| 15           | Eastern Washington | F. A. Williams, Spokane, Wash.             | W. A. Rockie                | Ford Roadster, Fair        | July 1-Aug. 31   | 62       |                 | 180.00      | 81.08     | 261.08        |          |       | 3,110   |
| TOTALS       |                    |  |                             |                            |                  | 70       |                 | \$225.00    | \$91.91   | \$316.91      |          |       | 3,550   |
| 16           | Idaho              | Hungerford, Moscow, Idaho                  | C. C. Ryan                  | Ford Touring, Old          | June 15-Sept. 9  | 87       |                 | \$75.00     | \$212.50  | \$136.50      | \$349.00 |       | 5,472   |
| 17           | Idaho              | Potlatch Garage, Potlatch, Idaho           | E. A. Snow                  | " " "                      | June 26-Sept. 30 | 97       |                 | 75.00       | 237.50    | 141.28        | 378.78   |       | 4,716   |
| 18           | Idaho              | O. Parkins, Lapwai, Idaho                  | A. L. Parkins               | " " ?                      | June 14-Sept. 11 | 90       |                 | 75.00       | 220.00    | 97.03         | 317.03   |       | 4,091   |
| TOTALS       |                    |  |                             |                            |                  | 274      |                 | \$670.00    | \$374.81  | \$1044.81     |          |       | 14,279  |
| 19           | Oregon             | Dunning Motor Co., Portland, Oregon        | C. Epling and Oregon Scouts | Ford Touring, ?            | June 22-Sept. 3  | 74       |                 | \$100.00    | \$240.00  | \$86.81       | \$326.81 |       | 4,146   |
| 20           | Oregon             | Dunning Motor Co., Portland, Oregon        | J. B. Shorett               | Ford Truck, ?              | June 22-30       | 9        |                 | 100.00      | 30.00     | 13.26         | 43.26    |       | 441     |
| 21           | "                  | Dunning Motor Co., Portland, Oregon        | C. Epling                   | Ford Roadster, ?           | July 10-Aug. 31  | 53       |                 | 100.00      | 170.97    | 68.63         | 239.60   |       | 3,004   |
| 22           | "                  | Dunning Motor Co., Portland, Oregon        | R. F. Wilbur                | " " ?                      | July 6, 7, 10    | 3        | 3.333           | 10.00       | 3.80      | 13.80         |          |       | 125     |
| 23           | "                  | Dunning Motor Co., Portland, Oregon        | G. A. Root                  | " " ?                      | Oct. 4, 6        | 2        | 3.333           | 6.67        | ---       | 6.67          |          |       | 90      |
| TOTALS       |                    |  |                             |                            |                  | 141      |                 | 457.64      | 172.50    | 630.14        |          |       | 7,806   |
| GRAND TOTALS |                    |  |                             |                            |                  | 1305     |                 | \$3669.83   | \$1463.63 | \$5133.46     |          |       | 69,456  |

In Table 3 no storage items are given. It may be noted that the total cost per mile depends directly on the ratio between the monthly rental and the number of miles travelled per month. The variation in costs of gas and oil depends largely upon the region in which they were obtained, the price of gasoline ranging from 25¢ per gallon on the coast to 65¢ per Imperial gallon (5/4 of an American gallon) in British Columbia.



STATEMENT III  
DISTRIBUTION OF FUNDS "WHITE PINE BLISTER RUST CONTROL"  
1922 - March 31, 1923  
ACCORDING TO STATES.

CALIFORNIA:

|                                   |   |   |   |           |
|-----------------------------------|---|---|---|-----------|
| Supervision                       | " | " | " | 529.79    |
| Project V                         | " | " | " | 328.47    |
| Project IV                        | " | " | " | 788.81    |
| Project III                       | " | " | " | 196.67    |
| Project II                        | " | " | " | 207.79    |
| Project I                         | " | " | " | 52,035.94 |
| Directly chargeable to California |   |   |   | 52,067.47 |

COLORADO:

|                                 |   |   |   |        |
|---------------------------------|---|---|---|--------|
| Supervision                     | " | " | " | 94.19  |
| Project V                       | " | " | " | 58.40  |
| Project IV                      | " | " | " | 136.68 |
| Project III                     | " | " | " | 34.96  |
| Project II                      | " | " | " | 36.94  |
| Project I                       | " | " | " | 533.75 |
| Directly chargeable to Colorado |   |   |   | 900.92 |

IDaho:

|                              |   |   |   |          |
|------------------------------|---|---|---|----------|
| Supervision                  | " | " | " | 1,295.28 |
| Project V                    | " | " | " | 803.06   |
| Project IV                   | " | " | " | 1,879.64 |
| Project III                  | " | " | " | 480.82   |
| Project II                   | " | " | " | 508.01   |
| Project I                    | " | " | " | 5,266.56 |
| Directly chargeable to Idaho |   |   |   | 9,432.43 |

MONTANA:

|                                |   |   |   |          |
|--------------------------------|---|---|---|----------|
| Supervision                    | " | " | " | 737.66   |
| Project V                      | " | " | " | 453.62   |
| Project IV                     | " | " | " | 1,061.75 |
| Project III                    | " | " | " | 271.60   |
| Project II                     | " | " | " | 286.98   |
| Project I                      | " | " | " | 4,192.70 |
| Directly chargeable to Montana |   |   |   | 6,938.29 |

OREGON:

|                               |   |   |   |           |
|-------------------------------|---|---|---|-----------|
| Supervision                   | " | " | " | 2,314.98  |
| Project V                     | " | " | " | 1,438.27  |
| Project IV                    | " | " | " | 3,359.41  |
| Project III                   | " | " | " | 859.35    |
| Project II                    | " | " | " | 907.95    |
| Project I                     | " | " | " | 13,265.84 |
| Directly chargeable to Oregon |   |   |   | 22,142.80 |

WASHINGTON:

|                                   |   |   |   |        |
|-----------------------------------|---|---|---|--------|
| Supervision                       | " | " | " | 105.66 |
| Project V                         | " | " | " | 44.47  |
| Project IV                        | " | " | " | 44.47  |
| Project III                       | " | " | " | 44.47  |
| Project II                        | " | " | " | 44.47  |
| Project I                         | " | " | " | 44.47  |
| Directly chargeable to Washington |   |   |   | 124.96 |

STATEMENT IV, RECONCILIATION OF STATEMENTS I, II, III WITH  
TOTAL EXPENDITURES FROM "WHITE PINE BLISTER RUST CONTROL"  
1922 - MARCH 31, 1923.

|   |               |                            |
|---|---------------|----------------------------|
| Checks issued by Calhoun to 1/31/23 . . . . .       | \$83,168.24   |                            |
| Checks issued by Calhoun in February for            |               |                            |
| Services, etc., previous to 1/31/23 . . . . .       | 1,560.41      |                            |
| Payments made in Washington, D. C. . . . .          | 28,191.23     |                            |
| Retirement fund 6/1/22 to 1/31/23 . . . . .         | 345.29        |                            |
|   |               | <u>\$113,265.17</u>        |
| Less:   |               |                            |
| Increased Compensation paid by Calhoun . . . . .    | \$1,260.00    |                            |
| Retirement fund included in above retirement        |               |                            |
| figure also in Washington, D. C. payments . . . . . | 160.39        |                            |
| Overpayment of salary to V. H. Young . . . . .      | <u>135.00</u> | 1,555.39                   |
| Total net expenditures . . . . .                    |               | <u><u>\$111,709.78</u></u> |



# AUTO COSTS IN FAR WEST JUNE 14 TO DECEMBER 31, 1922.

The following is a summary of auto costs and usages of both rented and personally owned cars used in the Far West during the past season. There were in use 23 rented cars, as follows: 17 Ford touring cars, 2 Ford roadsters, 1 Ford truck, 1 stripped Ford, 1 Overland touring car, and 1 Chevrolet touring car; and 11 personally owned cars.

TABLE 1.

## Summary of All Auto Costs in Far West June 14, 1922 to December 31, 1922.

| Project                          | Project Area     | Total Mileage | Total Cost | Cost Per Mile |
|----------------------------------|------------------|---------------|------------|---------------|
|                                  | Washington       | 71,501        | \$5,221.14 | .073          |
|                                  | Idaho            | 12,659        | 1,004.04   | .0793         |
|                                  | Montana          | 5,911         | 414.18     | .07           |
| II - Scouting and<br>Eradication | Oregon           | 11,260        | 901.50     | .08           |
|                                  | Wyoming          | 1,012         | 70.45      | .0696         |
|                                  | Colorado         | 1,607         | 112.50     | .07           |
|                                  | British Columbia | 3,228         | 267.68     | .0829         |
|                                  | Total            | 107,178       | \$7,991.49 | .0746         |
| II - Nursery<br>Inspection       | Wash. and Oregon | 712           | \$ 47.54   | .0667         |
| III - Barrier<br>Scouting        |                  | 6,576         | \$ 540.07  | .0821         |
|                                  | Grand Total      | 114,466       | \$8,579.10 | .0749         |





TABLE 2.

Summary of Auto Costs in Washington Under Project II  
June 14, 1922 to December 31, 1922.

| Nature of Work               | :<br>:Total Mileage: | :<br>:Total Cost: | :<br>:Cost Per Mile |
|------------------------------|----------------------|-------------------|---------------------|
| Location                     | : 25,778             | : \$1,845.26:     | : \$0.0716          |
| Eradication                  | : 25,569             | : 1,937.04:       | : .0757             |
| Western Washington Scouting: | : 7,469              | : 531.04:         | : .0711             |
| Eastern Washington Scouting: | : 9,366              | : 675.47:         | : .0721             |
| <u>Auxiliary Scouting</u>    | : 3,319              | : 232.33:         | : .07               |
| Total                        | : 71,501             | : \$5,221.14:     | : \$0.073           |

Note: In Tables 1 and 2 the storage items amounting to \$315.40 total, or \$.0052 per mile for rented cars are included in the costs. Storage for personally owned cars is not included.

TABLE 3.

Cost of Operating New Cars 1922 Model

| Five Passenger Car:      | :<br>:Total Gas and Oil: | :<br>:Total Miles: | :<br>:Cost of Gas & Oil<br>per Mile. |
|--------------------------|--------------------------|--------------------|--------------------------------------|
| Ford Touring             | : \$201.22               | : 8,340            | : \$0.0241                           |
| Overland Touring         | : 41.20                  | : 2,714            | : .0152                              |
| <u>Chevrolet Touring</u> | : 154.75                 | : 11,082           | : .0139                              |
| Total                    | : \$397.17               | : 22,136           | : \$0.0179                           |

The new Ford was not equipped with a speedometer and it is probable that the mileage travelled was underestimated. Also 32% of the travel was performed in eastern Washington and British Columbia where the cost of gasoline varied from 28¢ per American gallon to 65¢ per Imperial gallon (5/4 of an American gallon) in British Columbia.

[illegible]

TABLE 5.

Rental and Operating Costs per Mile for Cars, Using the Average Operating Cost per Mile of Cars Operated this Past Season (\$.0211 per mile).

| : Miles Travelled per Month |         |        |        |        |        |        |        |        |        |        |        |   |      |   |      |   |      |   |      |   |      |
|-----------------------------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---|------|---|------|---|------|---|------|---|------|
| Monthly:                    | :       | :      | :      | :      | :      | :      | :      | :      | :      | :      | :      |   |      |   |      |   |      |   |      |   |      |
| Rental :                    | 500     | :      | 750    | :      | 1000   | :      | 1250   | :      | 1500   | :      | 1750   | : | 2000 | : | 2250 | : | 2500 | : | 2750 | : | 3000 |
| \$100                       | :.2211: | .1544: | .1211: | .1011: | .0878: | .0783: | .0711: | .0655: | .0611: | .0575: | .0544: |   |      |   |      |   |      |   |      |   |      |
| 95                          | :.2111: | .1478: | .1161: | .0971: | .0844: | .0754: | .0686: | .0633: | .0591: | .0556: | .0528: |   |      |   |      |   |      |   |      |   |      |
| 90                          | :.2011: | .1411: | .1111: | .0931: | .0811: | .0725: | .0661: | .0611: | .0571: | .0538: | .0511: |   |      |   |      |   |      |   |      |   |      |
| 85                          | :.1911: | .1344: | .1061: | .0891: | .0778: | .0697: | .0636: | .0589: | .0551: | .0520: | .0494: |   |      |   |      |   |      |   |      |   |      |
| 80                          | :.1811: | .1278: | .1011: | .0851: | .0744: | .0668: | .0611: | .0566: | .0531: | .0502: | .0478: |   |      |   |      |   |      |   |      |   |      |
| 75                          | :.1711: | .1211: | .0961: | .0811: | .0711: | .0640: | .0586: | .0544: | .0511: | .0484: | .0461: |   |      |   |      |   |      |   |      |   |      |
| 60                          | :.1411: | .1011: | .0811: | .0691: | .0611: | .0554: | .0511: | .0478: | .0451: | .0429: | .0411: |   |      |   |      |   |      |   |      |   |      |
| 50                          | :.1211: | .0878: | .0711: | .0611: | .0544: | .0497: | .0461: | .0433: | .0411: | .0393: | .0378: |   |      |   |      |   |      |   |      |   |      |

TABLE 6.

Storage Table

| Total Amounts |         |                    |        | : | Cost Per  |         |        |
|---------------|---------|--------------------|--------|---|-----------|---------|--------|
| Storage:      | Miles   | Months:            | Days   | : | Mile      | Month:  | Day    |
| \$315.40:     | 60,892: | 43 $\frac{1}{2}$ : | 1,305: | : | \$0.0052: | \$7.25: | \$0.24 |

TABLE 7.

Summary of Monthly Rented Auto Costs

| Total Amounts |            |          |        | : | Costs per Month |           |         |          |
|---------------|------------|----------|--------|---|-----------------|-----------|---------|----------|
| Rental        | Operating  | Storage  | Months | : | Rental          | Operating | Storage | Total    |
| \$3,669.83    | \$1,463.63 | \$315.40 | 43½    | : | \$84.37         | \$33.65   | \$7.25  | \$125.27 |



TABLE 8.

Summary of Rented Auto Usage

| Total Amounts |                                  |         |          | :       | Miles per |                                  |   |
|---------------|----------------------------------|---------|----------|---------|-----------|----------------------------------|---|
| Cars:         | Months:                          | Days:   | Miles:   | Car     | :Month:   | Day                              |   |
| :             | :                                | :       | :        | :       | :         | :                                | : |
| 23            | : 43 <sup>1</sup> / <sub>2</sub> | : 1,305 | : 60,892 | : 2,648 | : 1,400   | : 53 <sup>1</sup> / <sub>2</sub> |   |

TABLE 9.

Summary of Rented Auto Costs per Mile

| Total Amounts |              |              |          | :          | Costs Per Mile |            |       |
|---------------|--------------|--------------|----------|------------|----------------|------------|-------|
| Rental:       | Operating:   | Total        | :        | Miles:     | Rental:        | Operating: | Total |
| :             | :            | :            | :        | :          | :              | :          | :     |
| \$3,669.83    | : \$1,463.63 | : \$5,133.46 | : 69,463 | : \$0.0528 | : \$0.0211     | : \$0.0739 |       |











